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Gigantic News Print Merger Rumored in Canada

Holt-Gundy Interests Reported to Have Gone Far In Effecting Big All-Canadian Amalgamation and This Consolidation and International Paper Co., May Practically Control the Industry—Price Agreement On News Print Said to Have Been Reached at $55.20 Per Ton, f.o.b. Mill

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., February 25, 1929.—The past week has witnessed renewed interest in securities of paper companies traded in on the Montreal Stock Exchange, and all sorts of rumors are floating around to account for it. The most generally accepted one is that an announcement is forthcoming to the effect that a price agreement has at last been effected at $55.20 per ton f.o.b. mill. But another rumor is that a gigantic merger is under way by which all the independent mills will be lined up either under the banner of the International Paper Company or the Holt-Gundy interests. It is said that the Holt-Gundy interests have gone far towards effecting a gigantic all-Canadian merger, and that henceforth a great Canadian consolidation and the International Paper Company will absolutely control the news print industry in Canada. Among specific companies mentioned as about to be taken over by rival organizations are the Wayagamack Pulp and Paper Company, which, it is said, will be sold to the Canada Power and Paper Company and the J. R. Booth Company, of Ottawa, which, it is said, will be taken over by the International Paper Company. As to the latter, J. F. Booth, vice president and managing director has issued a denial, stating that there is absolutely no truth in the report.

Science May Solve Over-Production

That science may solve the problem of over-production in the pulp and paper industry is the opinion expressed by Professor Harold Hibbert, head of the Research Institute established at McGill University by the Canadian Pulp and Paper Association. In an interview this week he prophesied as likely developments within the next few years the manufacture of celanese silk from wood pulp, which in the past has always been from cotton linters; a development in the manufacture of paints and lacquers; the establishment of proxylin lacquer manufacturing in Canada; and development in Canadian manufacture of explosives used in construction work.

In speaking about the progress already made in the improvement and adaptation of wood-pulp for use in the textile industry, Professor Hibbert stated that the main part of the work being carried on at the institute at the present time was looking to the increase of production of sulphite pulp at a lower cost.

"The studies now looking toward methods for raising the quality and decreasing the cost of production of sulphite pulp have made considerable progress," he said. "It is considered that the time cannot be far distant when it will be possible to transfer some of the scientific ideas to production. The results obtained warrant the belief that more scientific extensions should be possible for the industry."

In speaking of the strides that Canadian pulp and paper industry has made in the direction of the textile industry, Professor Hibbert pointed out that the bulk of pulp now used in rayon production comes from Canada. Rayon production has increased from year to year, sometimes gaining as much as 75 to 100 per cent in 12 months. Soon the Dominion will share in the benefits of the latest work of the research chemist, for not only can wood pulp be used in making rayon (Viscose) silk, but can be also used for other types of silk, such as celanese silk.

"While hitherto it has been necessary to make celanese silk from cotton," he said, "recent developments indicate that an equally satisfactory product may now be made wholly or in a great part from sulphite pulp."

Again, wood pulp will have a greater demand in the production of celluloses now used in manufacturing paint and varnish, as Professor Hibbert pointed out, "For the new developments in paint and varnish, celluloses are required and these in turn can be made from wood pulp."

Aetna Paper Co. To Rebuild Machine

The Aetna Paper Company, Dayton, Ohio, has made plans which will be executed in the next two months, calling for the complete rebuilding in every detail and particular, one of their Fourdrinier machines. In order to make the necessary additions to this machine it was necessary to erect a large building, permitting them to put on the necessary length of Fourdrinier and additional drying equipment.

While making this addition to buildings, additional expense was gone to in the way of adding on increased storage facilities for finished product which will permit of them carrying a heavy stock at the mill. The buildings are complete. The necessary alterations to the machinery will take place at an early date.

The power plant is being rebuilt, installing extraction type turbo generator and motorizing a large part of plant.

Large contracts involving the purchase of necessary equipment have already been placed with Pusey & Jones, builders of paper machines; the Paper and Textile Machinery Company, and E. D. Jones & Sons.

Suction roll and rotary screens and various other items necessary to make this one of the most up to date mills manufacturing bag content papers in the country will be installed. It was also necessary to spend much money in the beating room in increasing beating room facilities together with new Jordans. It is estimated the approximate cost of this work will exceed $500,000.00.

OHIO STATE UNIVERSITY

Want News Print and Pulp Left on Free List

Elisha Hanson Appearing Before Ways and Means Committee Also Requests That The Word "Standard" Be Left Out of The New Act—Howard A. Atterbury Appears for the Association of American Wood Pulp Importers and Requests That Pulp Be Continued Free

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 27, 1929.—Elisha Hanson, representing the American Newspaper Publishers Association appeared before the Ways and Means Committee of the House of Representatives last week, during the hearings on the Free List schedule of the tariff act and asked that news print paper be left on the Free List. He also requested that the word "standard" be left out of the new act and that it should change paragraph 1672 to read:

"Printing paper, excepting rotogravure paper, for use in the manufacture of newspapers."

Want Pulp Retained on Free List

Representatives of the Association of American Wood Pulp Importers also appeared before the committee and asked that mechanically ground wood pulp, chemical wood pulp, unbleached and bleached, also be retained on the free list as at present.

Statement by Howard A. Atterbury

The pulp importers of whom Howard A. Atterbury is president had the following to say:

The manufacture of paper is one of the leading industries of the United States, there now being in operation 800 paper mills and 279 pulp mills.

Most of the mills in the United States producing wood pulp of any description use the entire product of their pulp mills in their own paper plants, thereby obtaining the advantage of the protective duties placed upon paper. In general, the practice is for the paper mill making paper composed of wood pulp to have its own pulp mill and to depend on this pulp mill for its supply of this essential raw material, for which supply about 1,500,000 cords of pulpwood are imported annually from Canada, besides what is produced in the U. S. A. Some of these paper mills produce in their subsidiary pulp mills a surplus of pulp which is sold to competitive paper mills. There are few, if any, concerns making pulp exclusively for sale to paper mills, and, were a duty assessed on wood pulp, such few concerns would be enormously benefitted at the expense of the industry as a whole. Of the 800 paper mills in the United States, 745 use chemical wood pulps such as bleached and unbleached sulphite, kraft pulp and soda pulp, and, of these 150 have pulp mills which they either own and operate directly or through subsidiary companies. The remaining 595 mills are dependent upon the surpluses produced by the American mills having a limited excess of wood pulp supply or upon the importations of wood pulp from Canada and Europe.

It is evident that the shortage in domestic supply is about 40 per cent of the consumption in the United States, and this shortage will continue to be on that level or increase owing to the constantly lessening supply of pulpwood available in this country.

Further, it must be remembered that there is an annual import from Canada to the United States of about 1,500,000 cords of pulpwood, which is converted into mechanical and/or chemical pulp at pulp-mills in this country. This quantity of imported pulpwood when converted to sulphite and/or Sulphate pulp would equal about 800,000 tons, or more than 20 per cent of the total consumption of these two kinds of pulp. Consequently, it is safe to say that the United States is, in reality, at the present time self-supporting on raw material for paper manufacture requiring sulphite and/or sulphate pulps only to the extent of 40 per cent, and 60 per cent has to be imported either as pulp or as pulpwood. In view of the necessity of preserving our own forest resources and the increase in the consumption and manufacture of paper in this country making it absolutely impossible for the paper mills to obtain sufficient supply, it is clearly to be recommended that nothing be done to discourage the importation of sulphite and sulphate pulps from Canada and Europe.

The argument is sometimes advanced that a duty should be assessed upon wood pulp to encourage reforestation in this country. Research work by the Forest Products' Laboratory of the Government has, however, demonstrated conclusively that the quick reforestation claimed by the advocates of this plan is not feasible.

We are acting in this matter because we know the situation in the pulp market and realize that these 595 paper mills will still find it necessary to buy pulp from Canada or Europe if a duty is imposed. We do not feel that the industry as a whole should be assessed with a duty on an essential raw material for the benefit of the few mills making such raw material for outside sale who would enormously benefit at the expense of the country as a whole.

Statement by Mr. Hanson

After urging that news print be kept on the free list and that the new paragraph should be written into the bill as quoted above Mr. Hanson had the following to say, in part, in connection with "standard news print" which he designates as a misnomer:

It is a well-known fact that the science of making paper is not an exact one. There are no two paper makers who follow exactly identical formulas; who use exactly identical materials; or whose machines react identically to the same materials in the course of their processes of manufacture. These facts are so well established that this committee could very well take judicial notice of the further fact that two different machines, operated in the same paper mill, making paper out of mixtures of identically the same proportions of raw materials, will produce finished runs of paper, which, under chemical analysis, will differ to a greater or less degree. Even the sheets or rolls of paper which come from one machine, on one particular run, will vary in content upon analysis of samples taken only a few inches or a few feet apart.

In order to see how far from "standard" the process of making news print paper actually is, one needs but to pick up the first half dozen newspapers published in different localities, or even published in the same city for that matter, which he happens to see on a newsstand to see how greatly these newspapers differ in the kind of news print they use. Publishers who pride themselves upon the appearance of their newspapers give great care to the quality of their news print paper.

So, because of the fact that there was no such commodity known to the trade in 1922 as "standard news print paper," the use of these words in the Tariff Act of 1922 required that they be defined, for customs purposes, by the Treasury Department.

In concluding his remarks on the subject of news print Mr. Hanson said:

So it is submitted to this Committee that if it be the purpose of Congress to admit, free of duty, news print paper required for the publication of daily and weekly newspapers throughout the United States this Committee not only should reject the revision of Paragraph 1301 as proposed by the Import Committee of the American Paper and Pulp Association but it should change Paragraph 1672 to read:

"Printing paper, excepting rotogravure paper, for use in the manufacture of newspapers."

If the test of chief use, which the United States seeks to apply in its appearances before the courts, is to be applied through the decisions of those courts, then let it be applied through the law itself by the adoption of the above paragraph. But if the test of

chief use is to be abandoned and a certain particularly defined paper is to be admitted free of duty, then the proponents of such a program should, in all good faith, meet the issue fairly and squarely on that paragraph of the Tariff Law which is to be most affected by their program. No one has appeared in their behalf to advocate a tariff on news print, but the adoption of their definition through a revision of Paragraph 1301 as they have proposed, would accomplish that end.

If it be the policy of Congress to grant protection to paper other than news print paper, the American Newspaper Publishers Association will offer no objection to that policy. Congress having years ago determined that news print paper should come into this country free of duty, however, this Association believes any definition of that commodity should be contained in that paragraph of the law affecting its free entry. The Association, therefore, submits that the proposal for an amendment of Paragraph 1301, as offered by the American Paper and Pulp Association, should not be approved by this Committee in the form offered. Insofar as Paragraph 1672 is concerned, we have offered a substitute which we believe will more nearly affect the purpose of Congress without injury to any manufacturer of any grade of printing paper, news print or otherwise. We are willing to stand upon the test of use, which has been advanced by the United States Government itself in litigation now pending before the United States Court of Customs Appeals, confident that if that test be enacted into law and administered by the Treasury Department, the purpose of Congress to admit free of duty news print paper used in the manufacture of weekly, daily and Sunday papers will be accomplished without injury to the manufacturers of other grades of paper. It is to that end, and that alone, that the proposed substitute for Paragraph 1672 is offered.

Brotherhood Officials Leave for Montreal

ALBANY, N. Y., February 23, 1929.—Officials of the International Brotherhood of Papermakers including members of the executive board will leave here for Montreal on March 1 where they will hold a session in order to clear up considerable unfinished business before the biennial convention of the organization gets under way. President William R. Smith and his associates plan to stay in the Canadian city for about two weeks.

A discussion of the best way to bring about a five-day-week in the paper mills of this country and Canada will be one of the features of the gathering which will be attended by delegates from the various unions in all sections. The Brotherhood endorsed the proposition two years ago at the International gathering in this city but did not get far towards bringing about its introduction in any of the mills.

Judging from the number of credentials reaching headquarters of the union here from locals throughout the country the Montreal gathering will be of unusual size. Assurances have already been received that a number of prominent labor leaders will address the gathering including Tom Moore, president of the Dominion Trades and Labor Congress, Peter Heenan, Canadian Minister of Labor, and Matt Woll, vice president of the American Federation of Labor.

This week marked the twentieth anniversary of continuous service on the part of President William R. Smith with the local organization. He joined the Brotherhood while employed at Deferiet and has served in many capacities having been elected president in 1925 and re-elected two years later.

Donnacona's Officers Re-elected

The annual meeting of the Donnacona Paper Company was held in Quebec, under the presidency of Lt.-Col. J. H. Price. The report of the company showed profits of $869,762. From this was deducted $509,704 for bond and debenture interest, and $216,687 for depreciation. The net balance stands at $62,370. The officers were re-elected for the year.

Jobber's Exhibition and Banquet

The Metropolitan Bag and Paper Jobbers' Association will hold its annual exhibition luncheon and banquet Thursday, March 14. at the Hotel St. George, Brooklyn, N. Y.

Encouraged by the outstanding success of last year's program, similar arrangements have been made for this year. At one o'clock in the afternoon precisely, a luncheon at the expense of the association, tendered to the association members and guests, will start the events of the day. Immediately following the luncheon, a conference and forum has been arranged. The conference will be addressed by speakers carefully selected, who will speak on subjects of proven interest and instruction to the paper industry. Following the conference, those present will adjourn to the exhibition room where an extensive merchandise exhibition by manufacturers of paper and allied products will have been prepared.

All facilities to manufacturers for the display of their products will be afforded without charge of any kind. A table of about six feet long for display purposes will be allotted to each concern, exhibitors to have full charge of their own table and be responsible for their own property. It will be required, however, that no prices be displayed or business solicited at the exhibition. Space for display purposes will be allotted to manufacturers in the order of the receipt of their application, and you are therefore urged to send in your reservations at once to Nelson Berger, Forbes Paper Company, 32 Laight street, New York City.

Arrangements have been made to take care of samples and display paraphernalia, if they are sent addressed to the Metropolitan Bag, and Paper Jobbers' Association, Hotel St. George, Brooklyn, New York. Sufficient opportunity to arrange exhibits will be afforded.

The Metropolitan Bag and Paper Jobbers' Association, in arranging this annual event, does so only for the purpose of affording contact between the different factors in the paper industry from which a better understanding and closer cooperation may result.

The Metropolitan Bag and Paper Jobbers Association does not in any way solicit financial support in the form of subscriptions or contributions from anyone in the industry. All it asks is that those interested take advantage of the opportunity it affords to participate in its program of good will, by their presence at its luncheon, conference and banquet, and if a manufacturer, by a display of the products manufactured.

Superintendents' Convention Plans

Visitors at Wausau, Wis., during the tenth annual convention of the American Pulp and Paper Mill Superintendents Association June 6 to 8 will have the use of two large airplanes for their mill visits and sight-seeing tours, according to R. H. Kelly, general chairman. One will carry visitors to mills in the area from Eau Claire to Green Bay, and the other to Nekoosa, Port Edwards, Wisconsin Rapids, Stevens Point, Brokaw, Tomahawk, Mosinee and Rhinelander. This plan will enable those coming from long distances to visit any mills they choose without devoting much time to travel. Wisconsin has been equipped with many first class airports during the last two or three years so air travel is convenient and safe. Mr. Kelly expects a number of parties to travel to the convention by plane; in fact he has a letter from an Ohio superintendent to this effect. The airport at Wausau is one of the largest and best equipped in the state, with beacons for night flying. The hangar has a fleet of fourteen planes.

Air Preheater Co. Moves

Secretary-Treasurer, E. H. Naylor, 44 Vernon street, Springfield, Mass.

Executive Committee: E. W. Keifer, J. M. Conway, W. A. Wheeler, J. G. Rosebush, Northern Paper Mills, Green Bay, Wis.; F. L. Stevens, Stevens and Thompson Paper Company, North Hoosick, N. Y.

Demand for Paper Fairly Active In Philadelphia

Local Wholesalers Experience Steady Request From Leading Users of Standard Grades—Prices Are Firmer, Indicating That Post Inventory Clearance Offerings Have Been Practically Cleaned Up—Wrapping Papers Moving In Good Volume

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., February 25, 1929.—Though present demands are confined to hand to mouth buying among the distributors the wholesalers report a fairly active market among larger buyers of paper. In view of the marketing of time among the smaller consumers, who are not anxious to place stocking orders for other than immediate needs, this good demand among larger users of paper products has its encouraging aspect in effectiveness of mill campaigning for spring orders during the duller mid winter days. As the preparation for spring revival of business gets under way prices on standard grades of paper show firmer values, indicating that mills have cleaned up on offerings that were made in the post inventory clearance sales.

Wrapping papers, including krafts and fibers, are in good demand and are holding steadily to the prices to which they were advanced in mid January. There has been a reduction in glassines. The reduction of waterfinished fibers has not aided in sales promotion, as the market among distributors continues dull. The demand for news print has been smaller, as the low prices made several months ago brought good contract orders to local representatives and attractive values to the long term consumer now supplied at the prices then prevailing. Board manufacturers continue engaged on low priced products and are buyers of larger quantities of common stocks, at rising prices which will make it imperative to raise future quotations.

Paper stocks are holding well with an excellent demand for the cheaper grades consumed in the manufacture of paper boards. There is little accumulated stock in the warehouses and prospects are that an advance in prices will follow mill buying of larger quantities than now needed in all the grades. Old newspapers and overissue news are in good demand. Buying of book stock and the writing grades holds fairly well though mill purchases are not as heavy as they were a few weeks ago. The rag market is spotty with lessened supplies on hand in both foreign and domestic raw materials. The local importers of rags are looking for an advance in prices if mill activity gains, as present stocks are not sufficient to meet volume buying among manufacturers. Roofing rags are in fair demand at steady prices.

Paper Trade To Hear Convention Reports

There will be a combined meeting of the fine and wrapping paper divisions of the Philadelphia Paper Trade Association held on March 6 at the Bourse Restaurant for the purpose of presenting reports on the National association convention. The delegates to the National meeting last week, Leon Beck of the Charles Beck Paper Company, representing the fine paper section, and T. H. B. Smythe, delegate from the local wrapping paper branch, will give detailed reports of the activities of their respective divisions at this session. Vice President W. S. Wilcox, of the Philadelphia association, who represented the local organization in the absence of President Simon Walter, who is sojourning in Florida and Havana, will also speak on the Convention.

Wholesale Merchants Organization Changes Title

For the purpose of closer identity of the organization with its line of activities in the local industry, the former Wholesale Paper Merchants Association of Philadelphia met last week and voted upon the change of title of the body. The new name under which the Association will function is the Philadelphia Paper and Twine Association, as announced following the monthly session held last Friday at the Banjamin Franklin Hotel during the luncheon hour. At this meeting there was a full attendance and the membership listened to an interesting discussion on "Hard Fibre Twines" presented by Harold N. Newell, southern sales manager of the American Manufacturing Company, cordage and twine producers, as an educational topic of importance to the wholesalers of twines and like products linked with the paper industry. Announcement was made of the coming spring outing in a combination social and business meeting to be staged at the Roxborough Country Club on April 19. There will be a dinner and dance to follow the business session to be graced by the presence of the fair sex.

Power Systems of McDowell Mills Modernized

With a complete reconstruction and modernizing of the power and water systems of the McDowell Paper Mills the oldest established paper manufacturing plant operated consecutively by a single family for more than a century in the Quaker City and Eastern Pennsylvania, the plant is entirely modernized into an up-to-date paper making enterprise which will enable added production and greater speed in meeting orders of the dealers and converters of the lines in which the company specializes. Under the modernization plans the mills have been equipped with a new water saving plant installed by the Cochrane Separator Company and resetting of one of the 2000 pound Umpherson Beaters accomplished so as to give a large increase in stock for the machine. Modern floor scales of the latest improved type for weighing for the beaters, also for receiving materials from cars and trucks, have been added to the units. The installation of a Miami Driven Jordan has been completed and this unit is now in operation. The new condenser pipes that have been attached to the turbine brings the vacuum down to the lowest possible point and this is in connection with the remodeling of all engines, turbines and other units of the power equipment places the plant in first class condition. Other improvements that have been perfected within recent times and which enable the McDowell Mills to keep abreast with the modern paper making methods and to increase production and keep down overhead are the renovations of the boiler plant. The boilers have been re-set and larger and increased draft facilitated in connection with the installation of a number of Cochrane Separators for separating the water and the addition of other appliances for water softening purposes. Water and steam gauges of the improved type for showing the amount of steam consumed and the flow, now enable operation at a substantial saving in the cost of fuel. These improvements in the power and water service augment the further modernizing of the plant and the mills which have taken place over the past few years when the paper machines and calenders and other paper making units were rebuilt or replaced and the whole machinery equipped with motors and fitted for electrical operation at considerable cost. The interior and exterior of the mills have been redecorated along with the other innovations so that the McDowell Mills have now one of the most complete and modern paper manufacturing establishments to be found in this section despite its long history in paper making annals.

Scott Paper Co. Uses Flat Rock Mills

Pending the construction of a new paper making machine in the plant of the Scott Paper Company, at Chester, Pa., the manufacturers of sanitary tissues and towels are using the plant of the Flat Rock Mills of the Dill and Collins Company in the Manayunk District. The new machine which will be one of the largest tissue units in the world, is being built by the Moore and White Company, of Philadelphia, paper making machinists and when com-

pleted in the Chester plant of the Scott Company will greatly increase production. Pending the completion of this machine the Scott company has leased the Flat Rock Mill and is confining operations to the Philadelphia plant. The Dill and Collins Company has not operated the Flat Rock Mill for more than two years, confining its production to the Richmond Mills of that concern. The Scott Paper Company in its report of earnings for the year 1928 just issued shows profits of $757,633 equivalent to $4.04 a share after preferred dividends on the outstanding common stock. This compares with $596,543 earned in 1927. Net sales for 1928 were $6,714,532 an increase of $948,890 over 1927 sales of $5,765,642. Total assets were announced as $1,958,229 compared to $1,374,557 in 1927. The Scott Paper Company is listed on the Philadelphia Stock Exchange.

Fire Destroys Large Tonnage of Stock

A fire that smouldered and blazed alternately for more than 24 hours, destroyed 55 carloads of paper stock which had been stored in the sheds of the Container Corporation of America in Manayunk last week. More than a dozen firemen were overcome fighting the blaze suffering from the dense smoke and suffocating fumes of the smouldering paper stock. The entire fire fighting brigade of the Manayunk Mill district was called out to subdue the flames which took two hours to control and then broke out several times in the 24 hours that the conflagration existed. The shed is a large structure that extends a quarter of a mile along the Schuylkill River and adjoins the main mills of the Container Corporation, formerly the plant of the Philadelphia Paper Manufacturing Company. The waste paper is used in manufacturing paper boards by the company. Owing to the large amount of paper board which has been sold by the firm in recent months greater quantities of paper stock have been acquired and stocked by the manufacturers, the 55 carloads being recent consignments.

Edwin E. Hamilton Estate Over Half Million

An estate appraised at $635,274 exclusive of real property, was left by the late Edwin E. Hamilton, former member of W. C. Hamilton & Sons, paper manufacturers, near Miquon, just outside Philadelphia whose death took place December 3, 1928, at Atlantic City, according to inventory filed last week with the Register of Wills here. Mr. Hamilton was a brother of Charles L. Hamilton, at present vice president of the Hamilton company. Both are sons of the founder, W. C. Hamilton, of the paper mills devoted to the production of a high grade line of printing papers. Beneficiaries of his estate are his widow, Mrs. Ida G. Hamilton, who is to receive not less than $10,000 per annum; two sons, William C. Hamilton, of the Cresheim Arms, Germantown, and Edwin E. Hamilton, Jr., and two daughters, Mrs. Esther K. H. Horner and Oliva E. Hamilton, each of them to receive not less than $4000 per annum.

Alfred M. Collins Back from Africa

Following a six months' sojourn in the wilds of Africa, Alfred M. Collins, head of the A. M. Collins Manufacturing Company, will return to Philadelphia this week. Mr. Collins, who is a big game hunter, has been making another invasion of the interior of Africa looking for rare specimens of animals and studying the natives of the pygmy tribes of the Dark Continent. He is a member of several scientific organizations and of the National Geographical Society and has been a member of special groups of scientists who have at various times made research trips into the heart of the African jungles.

M. C. Brush Organizes New Chemical Company

The United Chemicals, Inc., has been organized under the laws of Delaware as a holding company to acquire and invest in domestic and foreign properties engaged in various phases of the chemical industry and with special products consumed by the paper making industry with a board of directors made up of former associates of chemical concerns linked with the industry. Among the trade associates who will be connected with the new company are Mathew C. Brush former head of the Pennsylvania Salt Company, of Philadelphia and William B. Thom, of the Wesvaco Chlorine Products Corporation and the Warner Chemical Company, who are on the directorate of the company. Other directors are Clifford B. Ewart, president of Taylor, Ewart and Co., Inc.; H. Hobart Porter, of Porter, Sanderson and Porter and Edwin A. Porter, Jr., vice president of the Guarantee Trust Company, New York.

Salt Co. Case Dismissed

The Federal Trade Commission announces dismissal of a complaint charging the Pennsylvania Salt Manufacturing Company, of Philadelphia, with acquiring stock of a competitor, the Michigan Electro Chemical Company of Menominee, Mich., in violation of section seven of the Clayton act.

New Flambeau Office Building

J. A. Coy, representative of the Flambeau Paper Company, of Park Falls, Wis., with offices in the Conway Building, Chicago, gives out the latest information concerning the completion of the new office building of the Flambeau Paper Company. The new building, which has two stories above ground, and one on the track level, is the crowning piece of construction in a constant effort to provide the most modern methods of manufacture in the Park Falls plant.

The old mill was destroyed by fire in 1900 and a more modern and substantial plant completed in 1903. In 1910 the second paper machine was added and in 1912 the finishing room was completed. In 1917 electric power was provided throughout the entire plant and in 1919 the sulphite mill got away to production. During the past year the Flambeau Paper Company erected and equipped a new and modern bleaching room, 60 x 60 in size and modern in every detail.

The Flambeau Paper Company, according to Mr. Coy, employs more than 250 workmen, providing them with steady work during the entire year and more than half a million dollars is paid out on this payroll. E. P. Sherry is president, and Guy Waldo, vice president and general manager, of this company, which has had such a remarkable growth over the past 25 years.

Bid Too Low for Paper Mill

The plant of the Colorado Pulp and Paper Company, Denver, Col., under receiver George W. Beck, was again placed on the auction block, but the only bid made was that of I. Rude formerly connected with the plant, his bid being $150,000 while it is understood that the concern has assets of $451,000. Mr. Rude is understood to own some of its stocks and bonds. This was the sixth attempt made by the receiver to sell the property, but as the court named $300,000 as the lowest that would be considered, it is not likely that Judge Samuel W. Johnson who has jurisdiction will accept the Rude bid.

As has been stated repeatedly there is some litigation pending between Charles M. Myers the man who built the plant and Joseph Buchhalter who with Mr. Myers purchased the property when it first went into receivership, and no doubt this is what holds back outside interests from taking over the property. It is running right along and is said to be making money.

Fire Damages Fort Wayne Mill

The entire fire department of Vincennes, Ind., was called to the plant of the Fort Wayne Corrugated Paper Company recently and for more than two hours fought a stubborn blaze in the pits directly under the long line of paper making machines. When the blaze was discovered, it had spread so the entire automatic sprinkling system was put into operation. In addition the yard force at the mill directed water on the fire from a hose line, but still it spread. The most of the damage was to machinery, the building itself being slightly damaged.

Ontario Provincial Reforestation Program

Plans Call For Creation of Five Great Forest Areas, of Approximately 20,000 Square Miles, Each In Control of Forester, With Office In Toronto—Methods Similar to Those Employed In Sweden, Finland and Other Countries, Will be Introduced

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., February 25, 1929.—Approximately 20,000 square miles, embodying five great forest areas, will become Ontario provincial forests, each under the control of a forester who will employ the latest methods of reforestation as directed by a chief provincial forester with an office in Toronto, is part of the Ontario Government's program according to a bill which was given a second reading in the Legislature this week. The Minister of Lands and Forests described the proposals, explaining that he would file an extensive plan before the committee. At present, plans call for the creation of bounded areas, one in the east, one along Georgian Bay at the upper end of Parry Sound, another on the north shore east of the Blind River, one embodying the Temagami reserve, and the last taking in the Mississaugua reserve. "This bill is a companion bill to the pulpwood conservation bill," stated the Minister. Because of the difference of the granting of timber limits and pulpwood limits, there was, however, a practical difference.

For many years lumber companies were sold areas outright on a perpetual lease which they renew as often as they wish. Because of this it was difficult to select locations for the forests in which it was hoped to introduce the modern forestry methods. It is now the plan of the Government to co-operate as much as possible and offer the companies holding leases on limits in the forests an opportunity to relinquish these areas for other limits that the entire forest may not be split up. Forestry methods will be introduced similar to those employed in Finland, Sweden and other countries. "Thus the old style of cutting everything and leaving fire traps will be abolished," said the Hon. Mr. Finlayson. "They will be placed on a sustained yield basis by which, year by year, something will be returned by them, and yet they will be retained as forests." It was not proposed to establish pleasure grounds and tourists' camps, he declared.

Dryden Paper Co. in Better Position

The Dryden Paper Company, Ltd., Dryden, Ont., is gradually working into a better position following the receivership which was dissolved some time ago. The capitalization will shortly consist of $1,500,000 6 per cent first mortgage bonds and 150,000 shares of common stock. The latter issue is being increased from 100,000 shares by the issuance of rights to shareholders to purchase two additional new shares at $25 for each five shares held. The rights will expire on March 1. The company has concluded a five-year contract with the Bates Valve Bag Company, a United States concern, for the supply of kraft paper used in the manufacture of paper bags. This company is temporarily using a section of the Dryden plant for its operations; this prior to the completion of a plant of its own in Dryden, Ont. The contract in question, it is stated, will absorb about 75 per cent of Dryden's present output of kraft paper and it is probable that in due course the contract with the Bates people will be increased. Dryden has greatly improved its balance sheet position by the repayment of bank loans and a sharp reduction in other current liabilities. The plant of the company is well located as regards shipments, being nearer the market for its products than are other producers. The current price of the common stock is around 26 and, in view of the continued improvement in the company's earnings and the outlook for the company, it is believed to have attractive possibilities for a hold over a moderate period.

Paper Box Secretary Banquetted

The February business meeting of the Toronto Carton Council combined business with a very pleasant function, serving to introduce the new permanent secretary, C. V. Hodder, and to do honor to the retiring secretary, S. J. Frame. A number of out-of-town members of the Canadian Paper Box Manufacturers' Association were present at the meeting and the Council were also favored by the attendance of Walter E. Trum, president; G. J. Kroeck, vice-president, and Howard P. Beckett, commissioner, of the National Paper Box Manufacturers' Association. Following the business session the gathering resolved itself into a banquet in honor of Mr. Frame, who retired from the position of secretary at the beginning of the year after fourteen years' service with the council. He was presented with an illuminated address of unusual design and a grandfather's clock, suitably inscribed. Mr. Frame was the recipient of many kindly words from the members of the association and as a fitting climax to a notable evening he was made an honorary member of the Canadian Paper Box Manufacturers' Association. The representatives of the National association acknowledged his valuable co-operation, and R. S. Dunlop, president of the Canadian Association, assured the visiting officials of the desire of the Dominion organization to co-operate in every way with the American association. In the course of the evening Mr. Trim briefly outlined the activities of the National association and referred to the coming convention, when the National Paper Box Manufacturers' Association will be meeting with the Canadian association in Toronto on May 15, 16 and 17. Committees from the Toronto Carton Council and the Canadian association are now at work on preparations for this event and a tentative program will soon be issued.

Dominion Engineering Gets Contracts

In spite of the fact that in many respects a truce has been called by existing news print mills and Governments of Ontario and Quebec to further expansion in the capacity now existing, there is sufficient activity in connection with the remaining machines contracted for and still to be installed to provide Dominion Engineering Works with a large volume of business at the present time. When the surplus of capacity developed some months ago reached an acute stage and the Provincial Premiers were forced to intervene, it was taken for granted generally that the pulp and paper end of Dominion Engineering's business would lapse badly and that the company would be forced to depend mainly on hydraulic machinery. This has turned out contrary to expectations. The decision of I. W. Killam to go ahead with his undertaking with the Nova Scotia Government on the Mersey River gave two large machine orders to Dominion Engineering through the new Walmsley connection. Then the International Paper Company was practically forced to go on with its New Brunswick news print mill and Dominion Engineering is completing, with two machines also, the very extensive program of news print development that has meant so much to it through its relations with International Paper Company. Lastly comes the decision of those behind the combined power and news print development at Buckinham, Que., utilizing the McLaren limits and pulp mill, and two machines of a similar type to those of the New Brunswick mill, are being built by Dominion Engineering for this plant. The last order may be delayed somewhat owing to agreements with the Provincial Governments, but the power development will go on rapidly.

Provincial Papers' Strong Position

The annual meeting of the shareholders of Provincial Paper, Ltd., was held at the head office in Toronto a few days ago when the old directors were elected with the addition of A. L. Fullerton, of Toronto, who fills the vacancy caused by the death of the late I. H. Weldon, president of the company. At the meeting of

directors held subsequently, S. F. Duncan was reappointed president, T. A. Weldon, vice-president, and Walter S. Barber, secretary-treasurer. The annual statement for the year ending December 31, 1928, revealed profits from manufacturing operations amounting to $1,138,330. The previous report of the concern, which took over the Provincial Paper Mills, Ltd., covers a period of only eight months, ending December 31, 1927, when profits for the period totalled $774,123. To the sum of $1,138,330 is added sundry revenue which brought the total to $1,140,230. This, with $72,927, brought forward from the previous year, made the amount available for appropriations $1,213,157. Bond interest, etc., absorbed $286,282; reserves for depreciation, $450,000; reserves for doubtful debts, $10,000, and for income tax, $35,000, leaving a net profit of $431,175. Preferred dividends absorbed $245,000, leaving a surplus carried forward of $186,775. Net available for common for the year was $113,748, equal to $1.13 on the 100,000 shares of no par value outstanding. The balance sheet shows current assets of $2,568,151, making the net working capital $2,042,087. In his report to the shareholders President Duncan stated that orders were sufficient to enable the company to operate the mills nearly full time, with the result that both sales and profits are approximately the same as for the previous year. According to Mr. Duncan conditions would have been somewhat better if it had not been for a change in the customs duties in the early part of the year. With the lower cost of production and the excessively keen competition prevailing in the United States, the change had permitted some paper to be imported at prices impossible for Provincial Paper to meet. Some publishers had not taken advantage of this, preferring to continue using Canadian made paper.

Notes and Jottings of the Trade

Addressing the Georgetown Business Men's Association, J. B. Mackenzie, well known in lumber and pulpwood circles, stated that that town had the distinction of being a pioneer in the manufacture of paper, which is today its largest industry. News print was first made in Georgetown in 1840 by Barber Bros. At this plant an engineering achievement, which all Canadians now take for granted, was first accomplished in Canada. It was the transmission of electric power over a wire from a second dam constructed on the Credit River, three miles below the paper mill, and the power was transmitted from the turbine at the dam to the motor at the mill by copper wire. This mill has been improved and now is producing book papers in large quantities and also base stock for two large coated paper mills located in Georgetown.

The Dryden Paper Company has experienced a heavy demand for its products during the past few years and among the new customers secured are the T. Eaton Company, Ltd.; Hudson's Bay Company and Barrett Company. In addition the company has a five-year contract with the Bates Valve Bag Company. It is learned that milling companies through Western Canada are now considering the adoption of kraft paper containers for their flour products. Should the milling companies decide on this type of container, as announced, a new and extensive market will be opened for the Dryden Paper products, at Dryden, Ont., which exclusively manufactures these containers for the West.

The plant of the Great Lakes Paper Company at Fort William, Ont., is showing great activity these days. The work of assembling the 300-inch Fourdrinier machine is proceeding and when installed it will be the largest in Canada. A. T. McLellan, superintendent of construction, expects the machine to be in operation by April next and it is hoped that the completion of a sulphite mill will synchronize with this arrangement. The sulphite tower has been erected and the remainder of the building will be finished as speedily as possible.

The Canadian Barking Drum Company, Ltd., Toronto office, announced the appointment of W. W. Cole, of Peterboro, Ont., as manager of their Canadian business. He has assumed charge of the Toronto office. Mr. Cole has been connected with William Hamilton, Ltd., of Peterboro, for twenty-five years.

At the annual salesmen's convention of the C. V. Syrett Paper Company, Ltd., Toronto, held a few days ago at the Carls-Rite Hotel, President C. V. Syrett reported favorably on the general business outlook. S. J. Frame spoke on an outsider's viewpoint of the paper salesman's task. Following the dinner the staff were guests of the firm at a theater party.

Fred L. Ratcliff, head of the Ratcliff Paper Company, Toronto, and Mrs. Ratcliff, left Toronto this week for New York, whence they will sail on an extended trip to the British Isles and the Continent.

Power Co. To Issue Stock

A new issue of 60,000 shares of cumulative dividend preferred stock of the Eastern States Power Corporation which was formed in 1925 principally to acquire and hold securities of public utility is being offered at par by F. L. Carlisle & Co., Inc., in a plan for expansion of the firm's holdings. Under the proposed expansion holders of preferred stock will be allowed to subscribe for one share of class B common for each share of preferred held at $45 a share to and including August 1, 1929; at $50 a share thereafter to and including February 1, 1930; and at $55 a share during the next year at the end of which they will expire. The Eastern States Power Corporation holds as its principal investment 187,500 shares of common stock of St. Regis Paper Company, representing 25 per cent of the total amount of common stock outstanding. The St. Regis Company, one of the largest paper producers in the country owns in turn a controlling interest in the Northeastern Power Company. Other investments of the Eastern States Power Corporation include stock in Buffalo, Niagara & Eastern Power Corporation Share Corporation, and the Mohawk and Hudson Power Corporation.

The earnings of the Eastern States Corporation are derived from income on investments, underwriting fees and profits realized from the sale of securities. Net available for dividends during the year ending December 31, 1928 amounting to $1,914,552 against dividend requirements on the preferred including this issue of $640,000. Such earnings do not reflect any income to be derived from the proceeds of this issue. Upon completion of this financing the corporation's capitalization will consist of 100,000 shares of cumulative preferred stock without par value and 539,234 shares of no par value class B common. The class B shares at current prices have a market value of more than $24,000,000 representing the equity junior to the preferred.

Firstbrook To Hold Annual Meeting

From present indications Firstbrook Boxes, Ltd., the leading Canadian box manufacturing company, will report a very successful year's business when the first annual general meeting is held within the next few weeks. A substantial increase in business has already been recorded by the cartons and corrugated sections.

The company was formed following the amalgamation of the businesses of Firstbrook Bros., Ltd., Canada Cartons, Ltd., and the Rudd Paper Box Company, Ltd. Firstbrook Boxes, Ltd., new factory and offices at Mt. Dennis, near Toronto, are practically ready for occupancy and will very shortly house all the activities at present carried on in the plants of the predecessor companies. All divisions will be in full operation in the new factory by the middle of March.

As economies will be effected at the Mt. Dennis plant, through greater productive efficiency, lower taxation, closer coordination of executive control and manufacturing facilities will at the same time be increased two-fold, the company looks forward to rising profits during the present year. These are anticipated not only from lower costs but from the steadily increasing volume of business following in the wake of expanding Canadian trade.

F. J. Reilly Goes With Rondout Mills

NAPANOCH, N. Y., February 25, 1929.—F. J. Reilly is leaving his Chicago connection to become night superintendent at the plant of the Rondout Paper Mills, Inc., here.

Paper Demand Shows Improvement in Chicago

Comparatively Good First Quarter of Year Assured For Fine Paper Division—Some Mills Running Behind In Orders, But Quotations Do Not Permit Much Margin of Profit—Wrapping, Book and Cover Papers Moving In Good Volume With Prices Firm

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., February 25, 1929.—With a comparatively large number of its most well known members in New York last week the personal items of news interest in Chicago paper circles were somewhat deleted but various lines of paper continued in their program of improvement and in most cases added to the expectation that the first quarter of 1929 would prove fairly good.

Waste paper merchants were fairly unanimous in the statement that the waste paper market was considerably improved with practically all lines sharing in what was termed a "busier market." As far as the representatives of news print mills in Chicago cared to commit themselves, no information was available on the price arrangement although business was declared to be normal with production said to be around 80 per cent.

One of the bright spots in the reports is the continued improvement of the fine paper situation which seems to assure a comparatively good first quarter of the year. Though prices still do not permit much of a margin of profit the demand is good enough to cause some mills to be running somewhat behind in orders. Wrapping, book and cover papers all report prices firm and the volume of business satisfactory.

Sulphite Paper Association's Plans

The recently organized National Sulphite Paper Manufacturers Association which was formally created at a meeting in Chicago the latter part of 1928 now has an attractive suite of offices in Room 1706 of the Conway Building at 111 West Washington street, Chicago. Though Ralph T. Davis, newly appointed secretary of the association was in New York City this week attending the first meeting of the association, which was held in connection with the American Paper and Pulp Association and National Paper Trade Association, the purposes of the new organization are now clearly defined to the trade.

Statistical data, charts, informative pamphlets, etc., will be supplied to the members of the association, including the fields of bleached papers, fibers, tag board patterns, glassine, mill wrappers, manila, grease-proof, imitation grease proof, railroad manila, pasters, etc. The association will work hand in hand with other associations in the paper field in an endeavor to cooperate in an educational way with its members. The executive committee includes R. L. Sisson, Jr., J. E. Alexander, J. M. Ward, J. L. Stille and W. L. Edwards. J. M. Ward, Detroit Sulphite Pulp and Paper Company, is the president.

Mr. Davis, the secretary, is a former resident of Indianapolis, where he acquired a valuable knowledge of trade associations.

Cornstalk Paper Discussed

The Inland Daily Press Association met at the Morrison Hotel, Chicago, February 19 and 20. While the meeting was almost entirely devoted to the press, of interest to the paper trade is the fact that a report on the print paper situation was given along with answers to the criticism of cornstalk paper now being circulated by wood pulp people, according to the Inland members. While, at this date, no information is available on the meeting, it is certain that the newspaper profession gave quite a bit of their time to an interesting discussion of the cornstalk paper situation.

In the meantime, the Cornstalk Products Company, now actively engaged in reaching out for large scale production, is getting some excellent advertising through its own letterhead. The letterhead seems to be, according to paper men, the best usage of the paper made from the cornstalk source. The bond paper is strong, durable and has an attractive pebble finish effect. The Cornstalk Products Company uses for its trade mark—on all letterheads, etc., a stalk of corn with the word "cornstalk" printed over it. It, in itself, forms an attractive advertisement.

News of the Trade

Concurrent with the appearance of the West Virginia Pulp and Paper Company's price list and stock sizes and weights in standard mill grades, February 15, appears the Westvaco Inspirations for Printers, No. 42, with the attractive title "From the Home Making Appeal." It is an effective discussion of the part printing plays in the making of the modern home including the following interesting subjects: "Illustrating the Articles—Effectiveness," "Selling the Effect—Rather Than the Product," a series of discussions with color illustrations on the selling of printed material to the house owner or builder; discussions of how to reach the architect the most effectively; a two page spread illustrating a large number of catalogs and booklets sent out by well known manufacturers, on the plan of helping the home building. The importance of excellent paper and just as excellent reproduction is reiterated again and again throughout the pages of Westvaco Inspirations No. 42. Some excellent four color work is also included.

"Rags" issue number 8, sponsored and published by the Rag Content Paper Manufacturers, makes its appearance on the desk of printers, advertisers, etc., this week. The use of color in magazine title, border, heading and initial attracts instant attention to an article on "Are Business Letterheads in a Rut—and Why?" It should prove interesting reading to the buyer of this important item as well as the printer. Follows a series of short articles on "Paper Must Stand Punishment," "Book Reveals Paper-Making Centuries Old," "Preservation of War Records," etc., all articles destined to show the importance of placing records that should be kept and on paper that needs the element of "appearance," on paper of rag content.

"Print More—Write Less" is the interesting title of the most recent direct mail material sent out by the Eastern Manufacturing Company. The 9 x 12 folder contains a number of layout illustrations of how printing can be used effectively on the letter head to shorten the sales letter and to make the importance of the product discussed stand out. In amplifying the sales letter or in supplementing it this method is also recommended to take the place of insert material, the explanatory text and illustrations being attached to the letterhead and the danger of mislaid and ultimately lost costly inserts done away with. Atlantic Bond is distributed in Chicago by the La Salle Paper Company.

"Warren's Cumberland Antique Finish," made by the S. D. Warren Company, makes its appearance through the mails this week. It is a low priced finish paper designed to meet the need for many kinds of printed pieces. It has a fine surface for printing type and line cuts. "Quaint Ideas About Printing" are also included in the four page folder, including reprint of a *Saturday Evening Post* advertisement plus a discussion of the advertisement content . A sample of Warren's Silkote Post Card is attached.

E. H. Taylor's New Post

E. Harry Taylor who, for the past ten years, has held a responsible position with the Beekman Paper and Card Company, has just been made secretary of the Sill Paper Company, of 200 Fifth Avenue, New York.

Walter G. Sill, president of the Company, due to the rapid growth of his business finds it necessary to be relieved of some of his duties, and Mr. Taylor, who has been in the paper business for over twenty years, was chosen by him for the position.

Consolidated Improvements Nearly Completed

Main Mill to be Changed Over From News Print to Ground Wood Book Paper Very Shortly—Bleach Plant and New Finishing Room Practically Ready For New Operations—Elimination of Large Beater Room One of Principal Changes Effected

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., February 25, 1929.—Very little remains to be done before the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., changes over its main mill from news print to ground wood book paper. The bleach plant and new finishing room are practically ready for the new operations. Grinders in the ground wood mill have been separated into two different sections with separate pumps for the new grades of paper.

Elimination of the large beater room is one of the features of the mill changes. Instead, machines 1 and 2 have been equipped with Beadle mixers, especially built for the purpose at the Nekoosa Motor and Machine Company. Boxes previously used on the machines for this purpose had proved highly successful, and the same plan therefore will be followed in the new book paper setup. This system eliminates the beaters because there is no need for an additional chest to equalize density, and the furnish is delivered directly from the mixer to the machine chest. This makes washups easier and makes changes of orders more simple. One operator on a shift can take care of furnishing for two large paper machines, in addition to handling the color.

The Beadle mixing box was the first metering system of its kind introduced in paper mills. All divisions of the Consolidated Company have used it for some time.

Lake Cargo Coal Case

Wisconsin paper mills, through C. R. Hillyer, have filed a brief in the United States Supreme Court in the Lake cargo coal case. They oppose the claim of the Interstate Commerce Commission that it has a right to prevent southern railroads from reducing rates on cargo coal to Lake ports. Paper manufacturers declare that when Lake cargo coal reaches the western terminus of the water haul and becomes dock coal, it constitutes the natural fuel supply of Wisconsin. Mr. Hillyer contends that his clients are entitled to enjoy all possible reduction in transportation charges without regard to whether the lower rates would benefit or injure the coal mining industry of any other section. The commission is attempting to defeat a 20 per cent reduction in freight rates granted to southern carriers.

Consolidated Freighter Dry Docked

The Lake freighter Robbins, which has been used by the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., to ship paper from Canada to Chicago, has been placed in dry dock at Manitowoc, Wis., for overhauling and remodeling. Passenger facilities are to be improved, and the loading facilities will be changed. Cargo gangways are being cut in the sides and handling machinery is being installed. Pulp and paper have been carried from Port Arthur to Chicago by this boat, and it has been used for shipping agricultural implements to Canada on its return trips.

First Aid Classes Formed

First aid classes now are being organized in paper mills and other industries of the Fox River Valley as an adjunct to the safety training in progress during the fall and winter. Twenty men from eight plants are taking this instruction, and they represent groups in each mill who are delegated to do this particular kind of work. They are taught by A. Findeisen, state mining engineer.

Appleton's weekly safety school now has an enrollment of 392 foremen, safety executives and employees, mostly from the paper mills. At the last week's session, F. H. Rosebush, of the Nekoosa-Edwards Paper Company, Port Edwards, gave the address. He mentioned some of the dangers of pulp and paper mills and the necessity for caution concerning these particular phases. He also emphasized the need of instruction to newer employees by those somewhat familiar with safety methods.

In a previous meeting, L. A. Crittenton, sales manager of the Kimball Piano Company, Chicago, declared in his address that it is necessary to remove the confirmed knockers who throw obstacles in the way of an organization. Safety should be made an individual requirement, he said.

Fire Losses Reduced

Fire losses, the biggest enemy of forest conservation in the past, have been reduced considerably in Wisconsin, according to a recent report of the state conservation department. During 1928 there were only 430 fires in the eleven forest protection areas of 13,000,000 acres. These burned over an area of less than 45,000 acres, most of it cut-over marsh land. About 70 per cent occurred during May, when there was a marked dry spell. Cool weather and frequent rains assisted the conservation squads in keeping down the amount. Another million acres will be added to the protection districts during 1929.

News of the Industry

Regional headquarters of the newly created forestry division for Wisconsin, Minnesota and Michigan will probably be located in Milwaukee instead of Madison, Wis., according to present plans. B. E. Tinker, traveling representative of the forestry service, has been considering a location in the Milwaukee federal building, believing it will be the best place for the headquarters. The major reforestation work is to be done in Wisconsin.

Paper mill sludge or lime waste dumped by the mills around Wausau, Wis., is converting worthless farms into good ones. It was found through tests conducted at the University of Wisconsin that the sludge contained a high per cent of limestone, because of the chemical action when it is used in its original state as quick lime. The sludge has been hauled far and wide over one or two northern counties and farmers are able to raise satisfactory crops where they had failed before. It is now possible to raise four or five tons of alfalfa to the acre, where it was difficult to produce one before. Paper mills are pleased that this otherwise useless commodity is helping their communities.

Sluicing of the Fox River to prevent spring floods is in progress. Wisconsin has had its heaviest snowfall in twenty-five years and the rains of the last summer and fall have kept the storage reservoir, Lake Winnebago, at a higher level than usual. Three gates of the control dam have been opened so as to make room for the spring rush of water. A plentiful water supply is therefore assured to keep mill waterwheels going.

A bequest of $1,000 has been made to St. Frances Xavier's Cathedral Green Bay, Wis., and a like amount to St. Joseph Orphanage under the will of Edward Shields of that city. Mr. Shields was superintendent of the Hoberg Paper and Fibre Company.

Morse Stock Drives Bulletin

The Morse Chain Company has just brought out a new publication, Bulletin No. 35, devoted to stock sprockets and chain which are being carried in various localities. The data is arranged in an ingenious way, allowing the customer to select two or three different designs to meet his specifications, one of which may be most suited to his requirements. It is due to the increased demand for service that these drives from 1 to 25 hp. are being added and can be shipped within 48 hours, bored and keyseated to fit customers' shafts.

Boston Paper Industry Generally Optimistic

Prosperous Business Conditions Indicated For Some Time to Come—Volume of Orders Booked So Far This Year Compares Favorably With Corresponding Period In 1928—Several Paper Mills Installing New and Additional Machinery

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 25, 1929.—Attention of paper merchants last week was focused largely on the convention in New York which was attended by many local members of the industry. The trade generally is optimistic. Indications point to a prosperous business for some time to come. The volume of orders so far this year as a whole compares favorably with that of the corresponding period in 1928. Several mills are installing new and additional machinery in preparation for big business to be operated as economically as possible.

During the last four weeks a concern manufacturing machinery has sold six paper mills a substantial amount of equipment, with a number of plants doubling their capacity, apparently denoting increased printing activity. Board mills have also been enlarging, showing more business from the box manufacturers. Lithographers throughout New England have been increasing their tonnage the last year. The greeting card business has become greater, calling for more cardboard.

While there is a tendency on the part of New England concerns to trade in New England, their purchasing extends also outside of this section because some suppliers located in other parts of the country are well represented with selling organizations and service here.

Generally speaking, the kraft market averages at least fair. Sales of wrapping papers and colored papers are in greater volume in a number of cases for February than they were for the same month in 1928. The trend in twine is also favorable.

Carter Rice & Co. Corporation finds business surprisingly good, compared with that of last year. Sales of high grade fine papers seem to be larger than ever. This increased activity, generally, is thought to be possibly the result of national advertising on the part of manufacturers and jobbers' salesmen pushing the high grade papers.

Box Board Situation

The majority of box board mills are operating full time, although the price situation has not materially changed. The trade looks for an amelioration of conditions, which are, however, somewhat better than they were.

Old papers remain comparatively quiet. The minimum price for white blank news is 1.60, although some are asking 1.75. Over-issue news is quotable at .75 to .77½.

The cold weather and snow in Europe tend to lessen the amount of foreign collections of stock and also impede shipment of pulp from Norway and Sweden. Foreign manila rope is decidedly strong, with an upward tendency on account of the severe winter. This commodity is quotable at 4 to 4.25. In foreign dark cottons and old linsey garments the market abroad is exceedingly firm, with accumulations report-scarce. Higher prices are expected before long.

News of the Industry

Rutter & McNaught, Inc., are issuing a new sample book of Border Bond and Ledger.

Whitney Bros., Inc., occupied a booth at the annual exhibition of the New England Hardware Dealers' Association in Mechanics Building last week, displaying their Six (6) Ply Fibreen, made from Sisalkraft. This product is "more than a building paper," thoroughly waterproof, strong, with sisal reenforcing fibers, both lengthwise and crosswise, a time saver in application, an insulator, and economical, in that it can be used for protection on a job at the start, for sheathing, floor lining, and other purposes in building.

The E. P. Lawson Machinery Company, Inc., which supplies equipment for paper manufacturers, looks forward to a good year.

The S. D. Warren Company, Cumberland Mills, has doubled its cutting equipment, adding nine new Seybold Mill Trimmers.

The following concerns have installed new mill trimmers: Eaton Paper Company, Adams; Strathmore Paper Company, Woronoco; Byron Weston Company, Dalton, all of Massachusetts; and the Ashuelot Paper Company, Hinsdale, and Brown Company, Berlin, both of New Hampshire.

With the increase of business in filter paper, the American Writing Paper Company is operating one of its mills entirely on this product. This company and the Eaton-Dikeman Company, Lee, Mass., have recently installed Wright Paper Drilling Machines to be used in the manufacture of filter paper.

Eaton, Crane & Pike and the White & Wyckoff Company, both of Holyoke, are increasing their equipments, the latter installing in the Holyoke plant envelope die presses and Seybold cutting machines.

The Old Colony Envelope Company, Westfield, Mass., is doubling its equipment.

The American Tissue Mills, Holyoke, Mass., have installed two new Seybold Mill Trimmers.

The Cole Paper Mills, Brattleboro, Vt., has incorporated in that state, to manufacture paper, bags, and other paper products, with a capitalization of $50,000.

H. H. Rutter, treasurer of Rutter & McNaught, Inc., has been passing a few days' vacation at Chatham, Mass.

Charles Sumner Bird, Jr., of Bird & Son, Walpole, Mass., is a member of the General Council of the Massachusetts Bay Tercentenary, Inc.

Richard Graham, of James J. Graham & Co., Cambridge, Mass., is passing a vacation in the South.

Isaac Minsky, of the Minsky Trading Co., now has a warehouse in Holyoke, Mass., with a siding on the Boston and Maine Railroad. Equipment has been installed

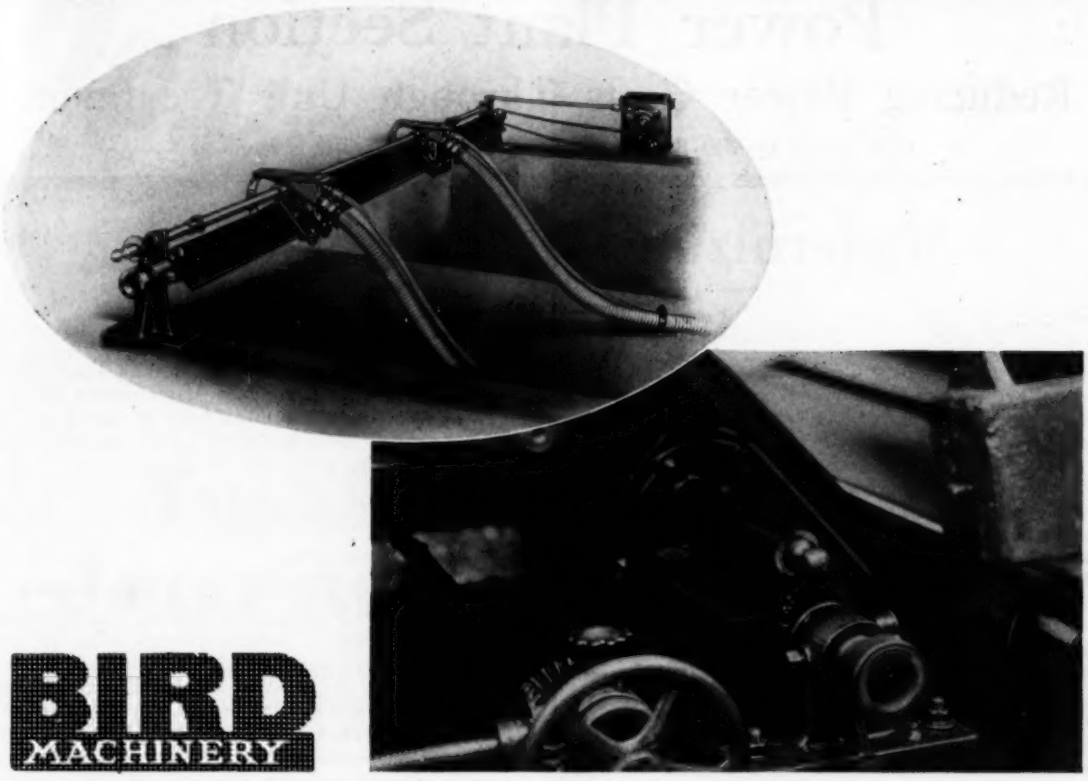
Ex-Governor Huntley N .Spaulding, of New Hampshire, treasurer of the Spalding Fibre Company, Inc., North Rochester, N. H., has given $5,000 to the New Hampshire Children's Aid and Protective Society, according to an announcement at the annual meeting of the organization at Manchester, February 20. Mr. Spaulding, who has served as head of the society for several seasons, was re-elected.

U. S. Envelope Co. Prospers

William O. Day, treasurer of the United States Envelope Company, has issued a financial statement to the directors of the company showing marked gains over the year before. This statement shows that the income for the year ending January 1, 1929, was $1,306,392 with assets of $14,209,352.

During the year the company made considerable addition to its plant investment, the 1928 figure of $8,533,344 being lifted to $9,009,412. The greater part of the investment is accounted for in machinery and tools, $322,403 having been spent in this purpose, while $129,934 was invested in additional real estate and buildings.

The regular dividend of $3.50 a share was paid March 1 and September 1. A similar dividend will be declared March 1 of this year. A dividend of $4 a share and extra dividend of $4 a share on common stock was paid March 1, 1928, and a dividend of $4 a share September 1; and March 1 of this year will see similar dividends to last year.



BIRD MACHINERY

The average production per felt per year on ten paper machines increased sixty per cent after the mill put in Vickery Felt Conditioners.

Let us show you what the Vickery Felt Conditioner can do on your machines.

BIRD MACHINE COMPANY
South Walpole
Massachusetts

2315

The Vickery Felt Conditioner

Power Plant Section

Reducing Power Costs Through Unit Treatment

Conducted by REGINALD TRAUTSCHOLD, Consulting Engineer

Modernizing The Power Plant

Pulverized Coal Firing

While the first requirement in the attainment of low power costs and an economical supply for process demands should unquestionably be the building up of the boiler room efficiency and economy to the very highest attainable point with the equipment on hand, arresting wastes by correcting draft troubles, stopping leaks of all kinds, etc., nevertheless the time invariably comes when old equipment and practices, systems and methods, must make way for more modern machines and practices. For example, take the question of fuel burning.

It is held that there are three critical periods in the modernizing of the power plant of a progressive and growing mill, in respect to methods of coal consumption: first, when the mill finds that it must change from hand firing methods to stoker firing; second, when the modernizing of the stoker installation becomes necessary, changing from obsolete stoker equipment to modern stoker equipment; and third, when the mill finds that it must plan a new boiler plant and is confronted with the selection of equipment which will best meet all operating requirements and conditions. This last situation, incidentally, dominates as well in the case of a new mill.

A better way of designating this third of the critical situations which sooner or later confronts every successful paper mill is, perhaps, as that which develops when capital investment can be viewed in its true economic aspect, when additional investment is demanded for the realization of an increase in rate of return on investment. When such a situation comes about, the problem is not so much one of bettering previous records as it is of securing the very best results attainable. Past practices and methods can be ruthlessly disregarded if necessary, provided the system selected will insure more economical as well as more efficient operation.

In the discussions on stoker installations which have appeared in these columns,[1] attention has been focussed chiefly upon conditions such as develop when displacing hand firing methods by stoker practice and when modernizing the stoker installation. That is, they have dealt with what may very properly be termed empirical developments in fuel consumption practices. The results so secured may be the ultimate in respect to the conservation of the invested dollar at the present time, but are they in line with the very best which has been secured with other coal firing methods, with systems, to be specific, for burning pulverized coal? This is a question that can never be answered offhand and is one that no mill finding itself in the position of having to select the equipment which will best meet all operating requirements and conditions can disregard.

The system of firing with pulverized coal is, unquestionably, one which appeals strongly to the imagination. From a theoretical aspect, the method has much to commend it. It has the endorsement of prominent pulp and paper mills, just as have modern stoker systems of firing. There are pulverized coal systems operating in paper mills to the very decided satisfaction of the mill managements. There are other mills which favor the modern stoker. In these columns, of course, preferences cannot be advanced or recommendations made, but it is quite proper to mention here some of the requirements for an economical system of pulverized coal firing and to cite the experiences of a mill or two with such systems. If, then, better results or equally good results at lower cost are to be secured with modern stoker equipment and practices, proofs to that effect simply have to be presented to gain similar notice in this section.

[1] See Paper Trade Journal for Nov. 10, 1927, Apr. 19, 1928, and Dec. 6, 1928.

Essential Equipment and Practice Features

The first equipment essential for securing efficient results from pulverized coal firing is, probably, that the boiler furnace itself be designed to meet the combustion requirements. This is extremely important, for upon it depends in large measure the efficacy of the burners and the success with which the pulverized coal is consumed. The burners, naturally, are an important feature, as is also the equipment for preparing, *i.e.*, pulverizing, the coal and for feeding the fuel to the furnace, but if the furnace of the boiler is not suitably proportioned for the service, the burners cannot function to the best advantage and full value cannot be derived from the expenses entailed in preparing the fuel for the burners.

The treatment of the coal, *i.e.*, its pulverization, etc., entails a burden of from 50 to 80 cents a ton even in the case of good quality coal and it costs quite considerably more to prepare a coal of poor quality, if all contingent expenses are taken into account. In fact, a charge of 50 or 80 cents a ton is quite a conservative estimate, based not upon theoretical computations, but upon the cold cost figures contracted in the pulverization of coal by those model plants, the power stations of the great public utility interests. The attainment of minimum costs for power and for steam to such establishments is of greater importance even than in the case of a paper mill power plant and it is only the part of wisdom for the paper making industry to weigh the experiences of these leaders in economical and efficient power production with the utmost care when faced with the important problem of making selection of that fuel burning equipment and combustion system which will best meet all operating requirements and conditions.

Consequently, the records pertaining to the cost of pulverizing coal in leading utility plants under everyday operating conditions, as compiled by the *National Electric Light Association* and incor-

PREPARATION OF FUEL—LABOR AND POWER EXPENSE ITEMS

Public Utility Plant	Station	Per ton of coal	
		Labor	Power
Cleveland Elec. Illuminating Co.	A	$0.1896	23.60 kwh.
	B	.1959	15.90
	C	.1723	20.37
Duquesne Light Company	A	.2392	24.33
	B	.2476	22.14
	C	.2525	22.59
New Orleans Public Service Co.	A		23.50
	B	.4970	24.10
Public Service Company of Colorado	A	.1025	21.80
San Antonio Public Service Co.	A	.1581	16.52
Sioux City Gas & Electric Co.	A	.2746	20.73
Average		$0.234	21.42 kwh.

Courtesy: National Electric Light Association.

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porated in the accompanying table, are most pertinent. These figures, it will be noted, however, consist simply of expenses contracted for labor and power consumption and do not include all the carrying charges which unavoidably burden the cost of coal preparation.

There is, of course, considerabe variation in the items for labor and power, but it is very doubtful whether the average values can be bettered appreciably at the present time in either the average paper mill or utility power plant. There are exceptions occasionally, as in the case of the Fitchburg Paper Company where the power consumed in the coal preparation amounts to only 11.4 kilowatt-hours per ton of coal pulverized, but apparently such record is much below the average and should not be taken as a criterion.

Power consumption, moreover, is influenced to a marked extent by the hardness of the coal, moisture content and upon the quality of the fuel. For instance, a rich, relatively soft coal containing 14,000 B.t.u. per pound can be prepared for the burners with the consumption of only about a quarter as much power as a hard coal containing 7,000 B.t.u. per pound. Furthermore, twice as much of the poor quality coal would have to be prepared as of the rich coal, necessitating, in the unit system of pulverized fuel firing which is now employed more generally than the central, or storage, system in paper mill plants, coal pulverizing equipment of about double the capacity necessary when treating the rich coal. Obviously, this entails heavier capital investment and adds to the fixed charge item of the burden imposed by the treatment of the coal.

This point complicates the economic aspects of the questions, for while it has been popularly held that one of the great advantages of burning pulverized fuel is that poorer grade and, consequently, cheaper coals can be advantageously employed, it is now held by some experts in the combustion of fuels that the best grades of coal, rather than the poorer, can be most profitably and economically pulverized. This, because the fixed charge item is far more influential than is customarily appreciated. Be this as it may, the mill contemplating the adoption of the pulverized coal system of firing its boilers should carefully investigate all cost items and give particular attention to the suitability of preparing various grades of coal. In no small proportion of the public utility power plants operating on pulverized coal it has been found necessary to use other than the coals for which the pulverization systems were designed.

Cutting down on the cost of coal preparation by disregarding the need of extremely fine pulverization is exceedingly poor policy, furthermore, for unless the combustion of the coal dust, its ignition, at least, can be effected almost instantaneously the justification of the expense burden imposed by the pulverization treatment is not apparent. The theory that has been advanced from time to time to the effect that if the boiler furnace was of sufficient depth and volume fine pulverization of the coal was unnecessary has certainly not been substantiated by the results secured in practice. On the contrary, practice as well as theory demonstrates that the fineness of the coal is a very important factor in the approach to the goal of effecting complete fuel combustion in the boiler furnace.

All this bears much weight upon the all important requirement of having the design of the boiler furnace meet the combustion requirements. Even under the most advantageous conditions, at least 1 cubic foot of combustion space is required for each 2 pounds of pulverized coal burned per hour. At the West Penn Power Company, where the highest reported boiler rating capacity in the United States with pulverized coal has been attained, 443 per cent in a 1,533-horsepower boiler, 1.8 pounds of pulverized coal is consumed an hour per cubic foot of furnace volume. This is very different from the conditions deemed essential only a few years ago when 6 cubic feet of furnace volume per rated horsepower boiler capacity was considered necessary. It is also very different from the records attained with modern stoker firing, for at the Hell Gate plant of the United Electric Light and Power Company 540 per cent of boiler rating has been attained with the stoking of 6.2 pounds of coal per cubic foot of furnace volume an hour. The boiler has even been operated up to 700 per cent of its normal rating.

In view of the continually higher boiler ratings which pertain and are to be expected in the operation of the modern power plant, these records indicate that the furnace of a boiler fired with pulverized coal should be about twice the size of the furnace of a boiler of like capacity fired by modern stokers, if the same boiler rating capacity is to be secured. This means that for comparable flexibility and capacity, the first cost of the suitably proportioned boiler-furnace for pulverized coal operation is considerably higher than that for a boiler fired with modern stokers, discounting the advantages of pulverizing the coal by just so much more.

HIGH BOILER RATINGS WITH PULVERIZED COAL FIRING

Location	System	Boilers	Boiler Rating Capacity
Donnacona Paper Co., Ltd.	Kennedy-Van Saum	2— 308 hp.	175-200%
Brompton Pulp & Paper Co.	Kennedy-Van Saum	4— 418	180-190
Paul A. Sorg Paper Co.	Fuller Lehigh	2— 579	155-197
Lockport Paper Co.	Erie City	1— 512	150-200
Fitchburg Paper Co.	Riley	1—1013	175-200
Mead Pulp & Paper Co.	Comb. Eng.	3—1057	200-220
		2—1057	300-350

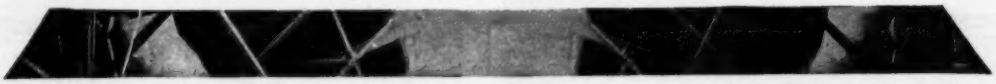
Attention should also be called to the fact that modern systems of pulverized coal firing entail the use of such accessories as air preheaters, water walls and other refinements which, it should be appreciated, are just as effective and essential in connection with modern systems of stoker firing. It is a mistake to associate such developments with any one particular system of combustion practice, for if such is done it simply complicates the difficulties of selecting that system which best meets all operating requirements and conditions.

While these very general comments on the essential equipment and practice features for a successful and profitable pulverized coal burning system cannot be interpreted as depicting in any way the progress made in this modern combustion method nor as portraying available systems or equipment, they should give some indication of the investigations needed on the part of a mill before coming to a decision in respect to the selection of combustion system and equipment best suited to individual requirements and conditions. As for the results which may be and have been secured with well planned systems of pulverized coal firing, the best procedure will be, without doubt, a brief citation of a few instances in which due care was exercised in planning the installations. Such statistical data as available will be presented and though it is quite questionable whether the cost figures are directly comparable, or that they cover fixed charges as well as they do operating expenses, they should prove of considerable value to the mill contemplating the modernizing of its power plant in respect to combustion methods, particularly as the statistics are furnished by high officials of the individual mills.

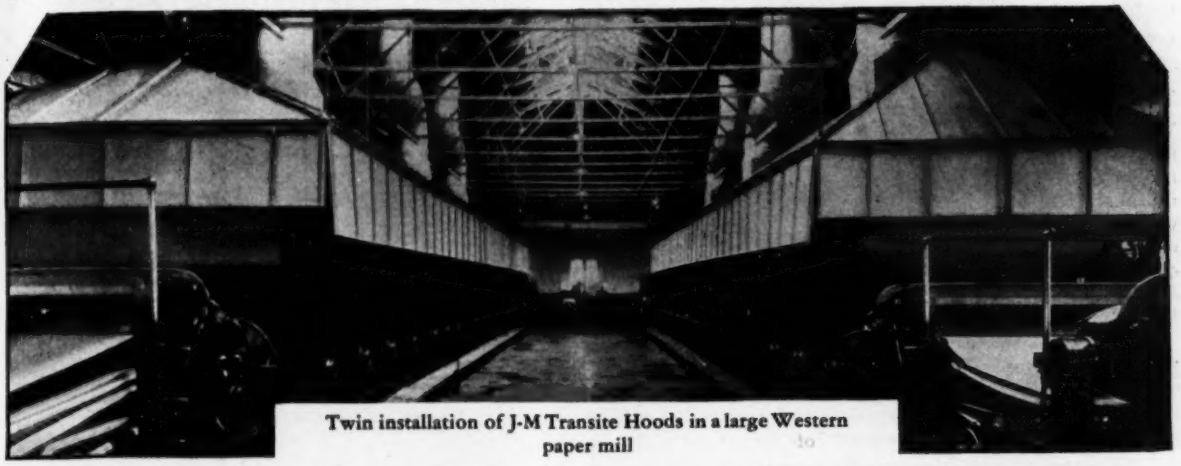
Cutting the Labor Charge in Half

One of the most interesting installations of pulverized coal firing is at the plant of the Lockport Paper Company, Lockport, N. Y.; first, because it has been in operation for more than four years and cost statistics for a four year period have been carefully kept and allocated to specific accounts, and second, for the reason that no refinements of water walls, air-heaters or even economizers are employed. Prior to the installation of the system, six 110-horsepower fire-tube boilers with stokers were in service, entailing the attention of four firemen, two coal passers and two ash-wheelers per 24-hour operation. The coal in use at that time would cost now about $3.20 per ton, f.o.b. Lockport, and ran 13,800 B.t.u. per pound.

In 1924, the power plant was remodelled by the installation of a single 512-horsepower water tube boiler and pulverized coal firing was adopted. The fuel was changed to ½ inch gas slack coal costing $2.94 per ton, f.o.b. Lockport, running 13,200 B.t.u. per pound. Based upon heating values, the substitution of the cheaper coal effected a net B.t.u. cost reduction of 6.3 per cent. This entailed, however, the pulverizing of 4.5 per cent more coal to secure the same heating capacity, but some slight economy, at least in first cost, was realized by the change in fuel.



PERMANENCE WITHOUT MAINTENANCE—LASTING HIGH EFFICIENCY



Twin installation of J-M Transite Hoods in a large Western paper mill

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No Painting — No Repairs — No Replacements

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MACHINE hoods made of Johns-Manville Transite incorporate the most economical and efficient construction possible. Not only are they scientifically designed to assist the ventilating system and insure highest efficiency in operation, but they are made of a material that is immune to deterioration, that is permanent and that requires no maintenance whatever.

More than one hundred J-M Transite Hoods are in use in the United States and Canada. About one third of these have been in use more than five years and several were installed ten years ago. Not a penny has been spent on them for repairs in all this time. *Can your metal or wooden hoods show a record to equal this?*

J-M Transite Hoods will not drip, leak or wear out. They are structurally strong, absolutely fireproof, highly resistant to acids and wholly unaffected by heat or moisture.

Vapor Tight—No Drip

Joints between panels are sealed with asbestos gaskets which positively prevent filtration of vapor into the room and protect steel angles from contact with vapor. The under side of the hood is absolutely smooth, eliminating drip from fasteners and supporting members.

Structurally Strong

Although all of the panels are made up on comparatively light steel angles, the method of assembling allows for a steel frame work sympathetic throughout, structurally strong, and capable of meeting all of the requirements of this service.

Reasonable First Cost

Johns-Manville Hoods are remarkably low priced. Our large production, and low fabrication costs make this possible. Erection costs are slight, only eight or ten laborers being required to work with our skilled erection foreman who supervises the work.

The panel type construction of the J-M Hood is unique. It eliminates costly machine shut-downs during hood erection and while repairs are being made. Speedy repairs or adjustments to the dryers, felt rolls and gears can be made by removing one or more panels, which are then readily replaced. The panel type construction makes it possible to do 90 percent of the work on the hood before shipment, so that hoods can be erected in very few hours and at slight cost.

Built both in stanchion supported and suspended types, J-M Transite Hoods are individually designed to fit each particular installation. They will last as long as the machine. The services of our engineers are freely offered to you. These Hoods and their operation are described in a booklet—the coupon will bring it.

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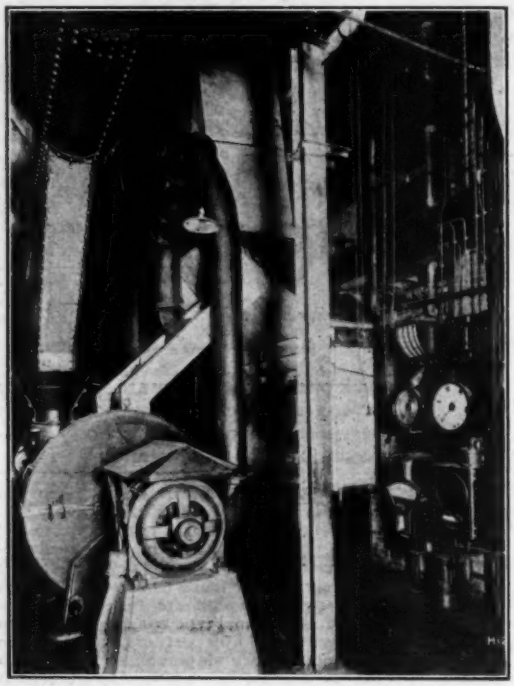
After four years of operation, the pertinent cost figures are: maintenance on pulverizers, including that on all wearing parts, 4.5 cents per ton of coal pulverized; furnace maintenance, 6 cents per ton of coal pulverized; and for power consumption, 18 kilowatt-hours with 5 per cent moisture content or 22 to 24 kilowatt-hours per ton when the coal contained 10 per cent moisture. The evaporation rate with the pulverized coal system, 3.1 pounds of coal per boiler horsepower at the normal operating load of 150 per cent rating, is 22.5 per cent better than formerly.

The chief economy, however, is in the reduction in labor expense. With the pulverized coal system and the single boiler, only two firemen are required, instead of four, only half as many coal passers and no special ash wheelers. Of course, all the reduction is not attributable to the adoption of pulverized coal firing, for whatever firing system had been selected for the single boiler, a material reduction in boiler room crew, as compared with that required for the six small boilers, would have resulted. Also, the increased efficiency of operation is very probably partly due, at least, to the more efficient type of boiler employed.

The furnace is cleaned every three weeks at a cost of $9.50 and the combustion system, including the coal handling equipment, and complete installation, entailed an investment of $37,000.00. While these figures do not exactly establish the fixed burden chargeable to the method of firing, the management of the plant is said to be



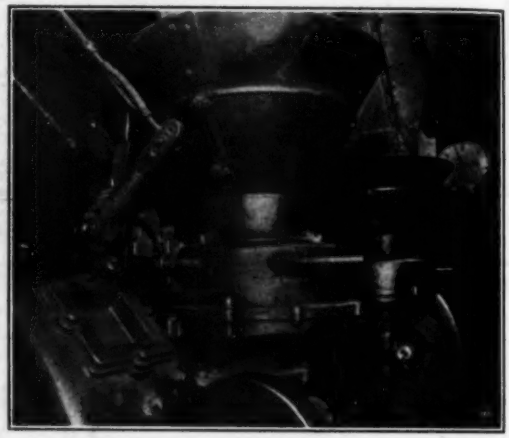
Courtesy: Riley Stoker Corp. FIG. 1
Pulverized coal fired boiler—Fitchburg Paper Co.

well satisfied with the results and to feel that the installation has proved a profitable one.

A $12,510.00 Saving

While it appears exceedingly difficult to secure concrete figures of savings realized through the installation of a pulverized coal combustion system, some pertinent and interesting cost figures pertaining to such an installation have been compiled by the Fitchburg Paper Company. The installation in question was made two or three years ago and an evaporation test conducted only about a year ago disclosed an efficiency of the steam generating unit of 83.3 per cent at 176 per cent boiler rating and that steam was being generated at the very attractive rate of 37.773 cents per thousand pounds.

Prior to 1925, the Fitchburg Paper Company operated sixteen relatively small 150-horsepower horizontal return tube boilers in its four paper mills. Three of these were stoker fired and the balance were fired by hand. The time having come when this concern was confronted with the necessity of making equipment selection which would best meet all operating requirements and conditions, it attacked the problem experimentally before contracting any great investment. The stokers were removed from the three boilers and a pulverization system of coal burning substituted. The stoker fired boilers were selected for the reason that



Courtesy: Riley Stoker Corp. FIG. 2
Close-up of mill—Fitchburg Paper Co.

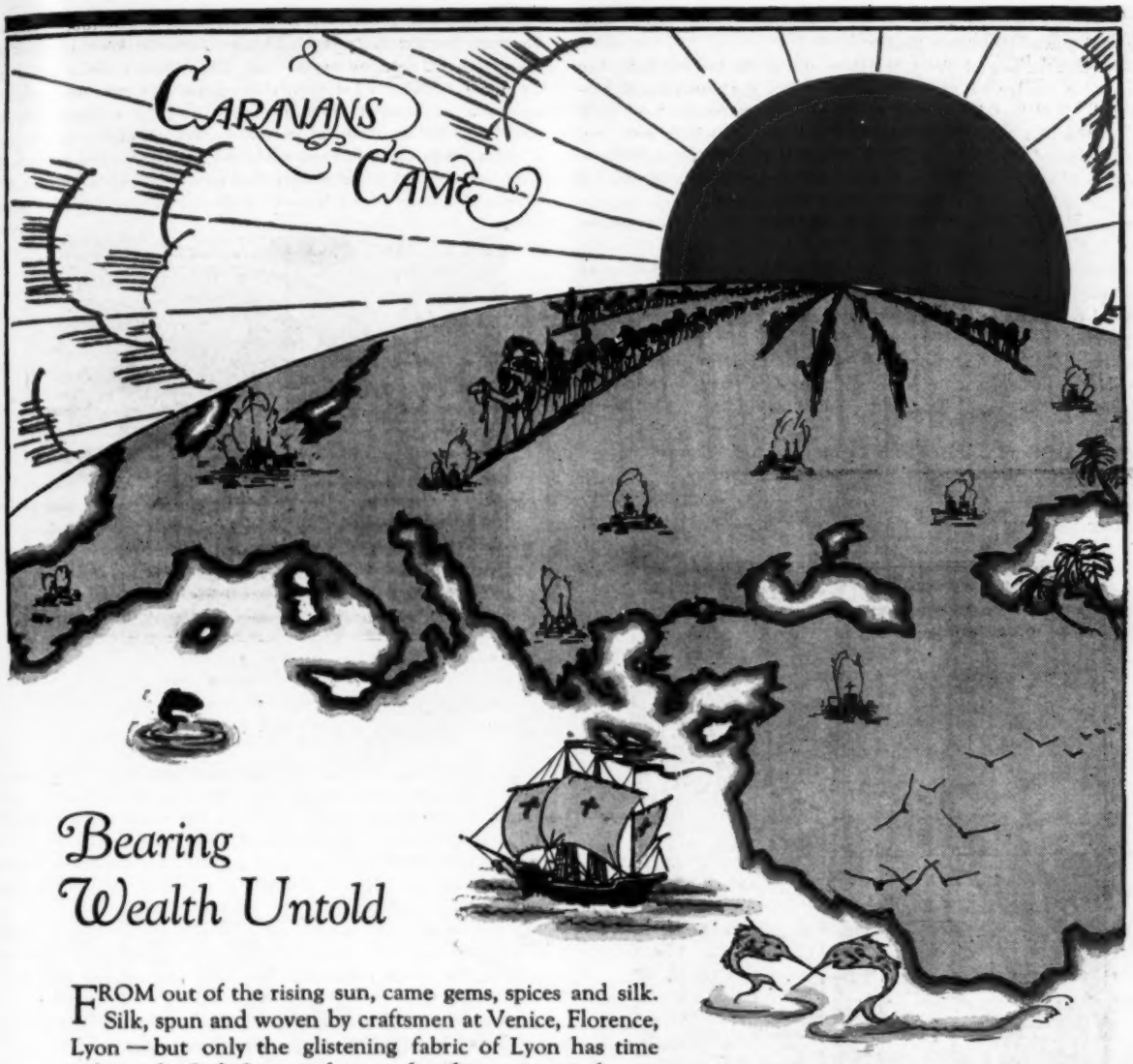
they afforded the 900 cubic feet of combustion space held essential for a 150-horsepower boiler fired with pulverized coal.

RESULTS OF EVAPORATION TEST—FITCHBURG PAPER CO.
Conducted by Riley Stoker Corp. and S. M. Green Co. of Springfield
April 12, 1928

Equipment	
1,013 hp. Bigelow-Hornsby Water Tube Boiler, Riley Atrita Unit Pulverizers, 2 Short Flame Burners, Ljungstrom Air Preheater, Foster Radiant Superheaters, Detrick Air-Cooled Front Wall.	
Proximate Coal Analysis	
Moisture	3.35%
Fixed carbon	62.04
Volatile matter	26.76
Ash	7.85
Sulphur	3.22
Readings	
Steam pressure	138.0 lb.
Temperature of feed water entering boiler (Fah.)	215 deg.
Temperature of steam delivered	540
Degree of superheat	180
Temperature of flue gases leaving boiler	526
Temperature of flue gas leaving air preheater	319
Temperature of air to preheater	116
Temperature of preheated air to pulverizer and burners	432
Total Quantities	
Total weight of coal as fired	49,947 lbs.
Total weight of dry coal	48,274
Total weight of feed water	529,264
(Factor of evaporation based on feed water temperature to boiler 1.146)	
Total equivalent evaporation based on feed water	606,537
Equivalent evaporation from and at 212 deg. per hr.	61,700
Boiler horsepower developed	1,788
Per cent of boiler rating developed	176%
Flue Gas Analysis (Before boiler outlet damper)	
Carbon dioxide (Orsat)	12.9%
Oxygen	5.8
Carbon monoxide	0.0
Nitrogen, hydrogen, etc.	81.3
Efficiencies	
Heating value of coal as fired (per lb.)	14,150 B.t.u.
Heating value of coal dry	14,640
Efficiency of steam generating unit	83.3%
Power Consumption	
Pulverizer, per ton of coal	11.4 kwh.

Courtesy: Fitchburg Paper Company.

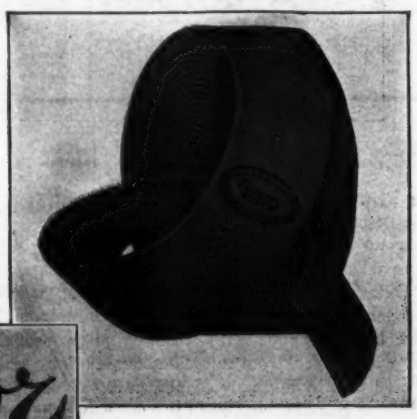
The provision of a pre-ignition furnace was found necessary, but after this was provided the boilers could be driven at 200 per cent. of rating without formation of slag or injury to the refractories. Tests of the boilers under ordinary operating conditions at from 150 to 200 per cent. of rating demonstrated the attainment of efficiencies of from 73 to 74 per cent. This was deemed so satisfactory that three of the old hand fired boilers were replaced by a modern 1,013 horsepower water tube unit using pulverized fuel. This latter is the boiler which furnishes steam at the attractive rate of 37.773 cents per thousand pounds, such rate being said to



Bearing Wealth Untold

FROM out of the rising sun, came gems, spices and silk. Silk, spun and woven by craftsmen at Venice, Florence, Lyon — but only the glistening fabric of Lyon has time enhanced. Only Lyon is famous for this ancient industry. Only her craftsmen, chosen experts skilled in the art of their fathers. Generations of experience was the warp of their loom. So it is with Condor Belt.

All manufacturers have available the same materials, practically the same machines — yet Condor interweaves 25 years of experience in its Belt. Experience means skill in assembling gifts of nature, skill in applying machines of man — skill makes Condor the acme of belt manufacture.



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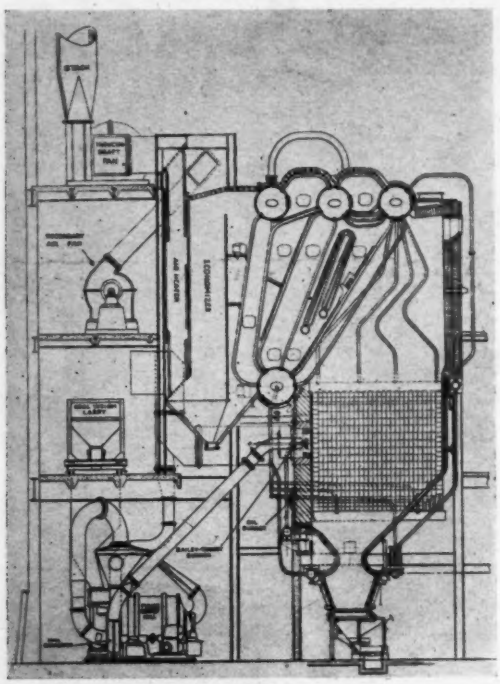
cover every expense entailed in the generation of the steam, from the coal pile to the steam header.

The maintenance of the pulverizers, up to the present time, has imposed a burden of approximately 2 cents per ton of coal pulverized. Add to this the fact that carefully conducted tests have shown that the power consumed to drive the pulverizing mill, etc. has amounted to the unusually low figure of 11.4 kilowatt-hours per ton of coal pulverized and some conception can be formed of the real economies and high efficiency responsible for the attractive steam rate attained, which in power unit cost terms is better than 1¼ cents per kilowatt-hour.

Another contributory factor, though the entire saving cannot be attributed to the adoption of pulverized coal firing, is a very substantial reduction in boiler room pay roll. The substitution of the large modern and efficient water tube boiler for several of the smaller and less efficient fire tube steam generators has made it possible to dispense with the services of nine men, firemen and helpers. In this way alone, an annual saving of $12,510.000 is effected.

A Steam Rate of 27.6 Cents per 1000 Pounds

An excellent example of modernizing the power plant in which a modern system of pulverized coal firing was the selection for meeting all operating requirements and conditions is the plant of



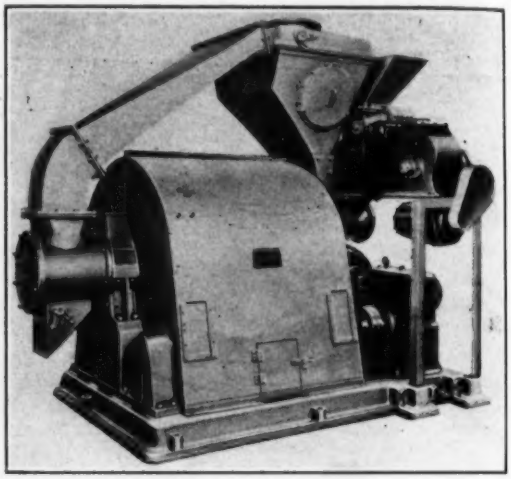
Courtesy: Fuller Lehigh Co. FIG. 3
Arrangement of boiler and fuel combustion system—Paul A. Sorg Paper Co.

the Paul A. Sorg Paper Company recently put into operation at Middletown, O. It is particularly interesting as it promises to clear up a situation which was constantly becoming more and more unsatisfactory. The Paul A. Sorg Paper Company, the W. B. Oglesby Paper Company and the Frank Smith Paper Company, all operated under the supervision of the same group of officials, were being supplied with steam from two separate boiler houses and with power from miscellaneous engines and turbines, supplemented also by a supply of power from public utility lines.

Such a situation was not conducive to either efficient or economical operation of the mills. Continuity of steam and power supplies were not assured and the arrangement was further burdened by high cost. It was decided, consequently, to built a new power plant capable of caring for the requirements of all three mills, centralizing steam production and the generation of power.

Both stoker and pulverized fuel firing were given careful consideration for the new plant. The decision was made in favor of pulverized coal because of the fact that during Sunday and holiday periods, when the demands for steam are low and sufficient power can be secured from a small hydroelectric plant, utilizing water from the hydraulic canal serving the mills, the boilers could be operated on oil instead of coal, and also because of certain peculiarities of powdered coal operation considered advantageous.

Without going into a detailed description of the new paper plant and its equipment, it will suffice to say that it houses three



Courtesy: Fuller Lehigh Co. FIG. 4
Type of mill installed at Paul A. Sorg Paper Co.

efficient 579-horsepower water tube boilers operated at 415 pounds working pressure, with superheaters rated at 250 degrees at 300 percent, rating, water cooled walls in the sides and in the rear wall and hopper floor, and fired by a forced draft turbulent burner serviced by a 7,000 pound mill. Each of these boilers is capable of caring for the average demand of all three mills with a ten per cent excess capacity.

Two of these boiler units were erected and placed in operation before the third one, now in service, was installed. This latter is similar in all respects to the other two, except that it has in addition a water cooled front hopper floor. The first two units, including the building and all equipment of the boiler plant, coal handling and coal treatment accessories, entailed a total investment of approximately $435,000.00. This covers of course the pro rata cost of building, coal handling equipment, etc., which on completion of the plant was allocated to the third boiler unit.

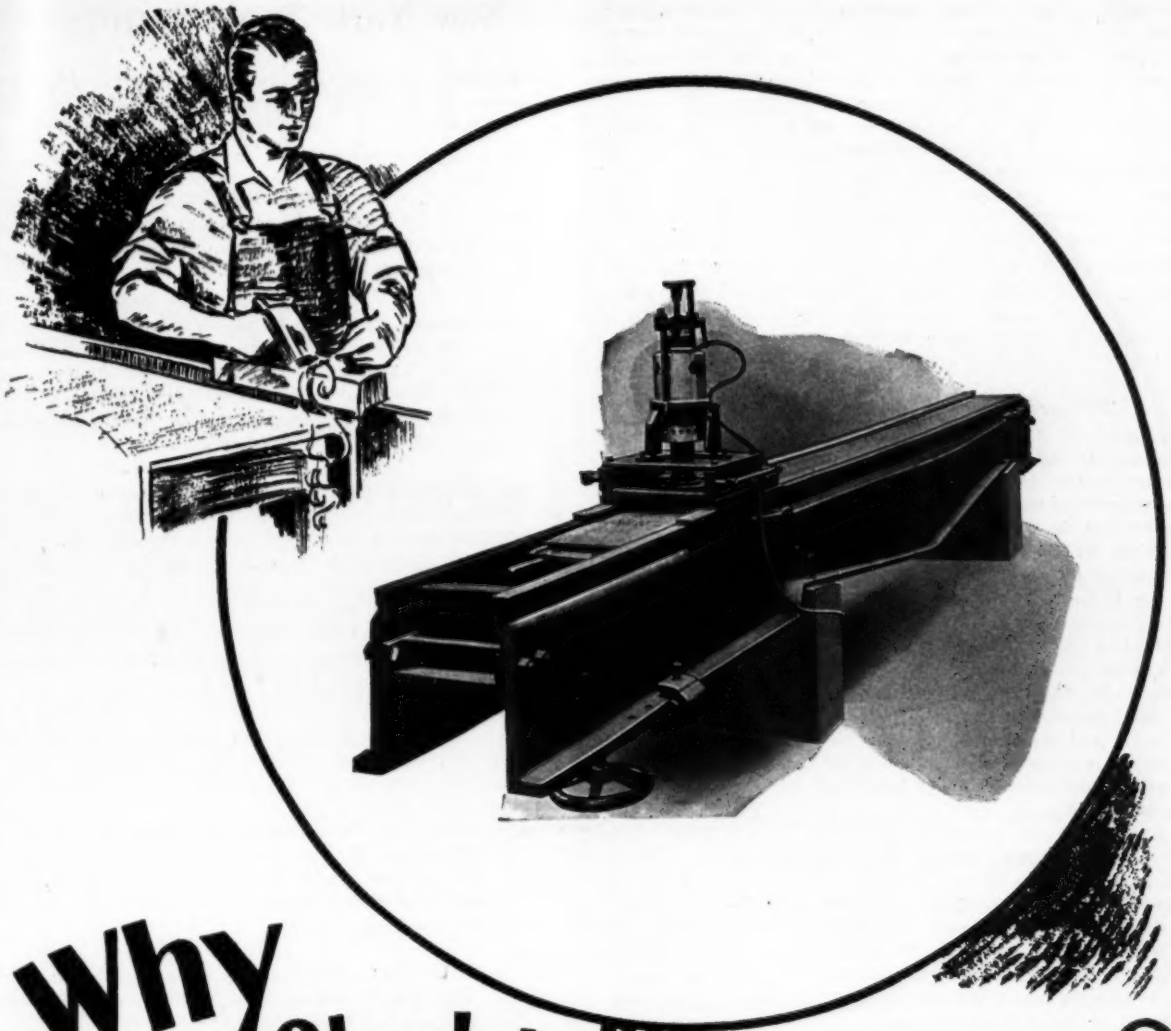
Tests conducted on the first two boiler units have shown boiler efficiencies up to 87.6 per cent and the operating engineer's record shows a steam cost of 27.6 cents per thousand pounds. Translating this into terms of equivalent power costs, it means a kilowatt-hour at 0.95 cent, or a horsepower-hour for a shade over 7 mills. This is one of the best records attained by any power plant under normal operating conditions.

A very fair grade of West Virginia coal is employed, running about 13,939 B.t.u. per pound. This, the use of coals of high heating value, incidentally, is quite general in pulverized coal system installations were high boiler efficiencies and low steam costs pertain. At the plant of the Lockport Paper Company, the coal runs about 13,200 B.t.u. per pound and at the Fitchburg Paper Company, 14,150 B.t.u. per pound as fired.

Mead Pulp & Paper Company Installation

West Virginia nut and slack, running 13,500 to 14,500 B.t.u per pound, is employed at the plant of the Mead Pulp and Paper Company, Chillicothe, O., where efficiencies of from 80 to 84 per cent are being obtained regularly with a system of pulverized coal firing, the boilers operated at unusually high ratings for a paper

(Continued on page 34)



Why Cling to Obsolete Planing Methods?

Now it is possible to restore the factory made surface to all Suction Boxes—having every box surface planed uniformly—without variations of any kind, which can never be accomplished by hand planing. The Valley Suction Box Planer is the 1929 way of planing Suction Box covers—so why cling to obsolete methods?

The Valley Suction Box Planer possesses the following advantages:

1. ***Substitutes precision machine methods for variable hand planing.***
2. ***Saves time—not only does the work accurately, but does it quickly.***
3. ***Reduces planing costs. Machine work costs less than hand planing.***

The Valley Suction Box Planer is of machine tool design, electrically driven, a device that can be placed in any convenient place in your mill.

Let us send you complete details.

VALLEY IRON WORKS CO.

Machinery for Paper and Pulp Mills

APPLETON WISCONSIN

New York Office: 350 Madison Avenue

Western Manufacturing & Sales Division: Smith & Valley Iron Works Co., Portland, Oregon

mill plant. Under normal conditions, three 1,057-horsepower boilers, served by superheaters and air preheaters, are driven at from 200 to 220 per cent rating and when one of these units is cut out the other two are able to carry the full load, operating at from 300 to 350 per cent of rating.

At this plant, the coal, which is not only high in heat content, but contains less than 3 per cent moisture, is crushed over a magnetic separator and such good combustion conditions are maintained that the CO_2 content of the flue gases runs from 14½ to 15 per cent. Attractive steam rates pertain, naturally, and the plant is a very good example of the worth of correct engineering. It is characterized by a correlation of justified first cost and high operating efficiency which not only insures low operating costs, but carries that insurance of reliability and flexibility which is a most important factor in the economies of steam generation in a paper mill.

To Inventory Canadian Forest Wealth

An inventory of the national forest wealth of Canada will be undertaken by the Federal Government, it was announced a few days ago by the Hon. Charles Stewart, Minister of the Interior, at a luncheon of the Forestry Association in Ottawa. Declaring that this was the first venture of the kind in the history of the Dominion, Mr. Stewart observed: "The time has come when an inventory of the forest wealth of Canada is absolutely essential, and the Federal Government has decided to start this year on such an inventory in the Prairie Provinces." Mr. Stewart added that he had written to the Premiers of all the provinces to ask for separate inventories.

He also intimated that a suggestion had been thrown out for a conference between Federal and Provincial representatives to discuss ways and means of completing the Dominion-wide Stock-taking. A message of assurance that he was ready to join immediately in the proposed scheme was read from Premier Taschereau, of Quebec.

Improved White Sulphite Papers

An improved grade of white sulphite papers will be put on the market shortly by the Marinette and Menominee Paper Company and the Victory Bag Company, of Marinette, Wis., according to W. W. Hinnenthal, manager. These will include white sulphite wrapping and white bag and tissue papers. The printing department as enlarged during the last year and some improvements and expansion are contemplated this year.

"We look forward to the same activity as last year," says Mr. Hinnenthal, "with the possibility of some increase. The volume of business during 1927 and 1928 has been exceptionally good. The past two months have been very quiet and the mills have run very largely to stock, but business has improved recently, and we now have a satisfactory amount of orders on file. Mills ran close to maximum capacity last year, but we do look for some increase."

New TAPPI Officers

The annual election of officers of the Technical Association of the Pulp and Paper Industry resulted as follows:

President, P. H. Glatfelter, P. H. Glatfelter Company, Spring Grove, Pa.; Vice-President, Maxmillian Krimmel, Hammermill Paper Company, Erie, Pa.; Secretary-Treasurer, R. G. Macdonald, 18 East 41st street, New York.

Executive Committee: R. H. Laftman, Bogalusa Paper Company, Bogalusa, La.; Robert Bell-Irving, Powell River Company, Powell River, B. C.; John S. Bates, Price Bros. & Co., Quebec; Ralph A. Hayward, Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich.; W. O. Johnson, Strathmore Paper Company, Mittineague, Mass.

John Hedlund Leaves Northland Paper Mill

WINONA, Minn., February 25, 1929.—John Hedlund has resigned as superintendant of the Northland Paper and Fibre Company here to accept a position with another company.

New York Trade Jottings

The Hammermill Paper Company gave a very enjoyable dinner last Monday at the Hotel Pennsylvania, New York.

* * *

Henry Lissberger, president of the National Association of Waste Material Dealers, is offering a beautiful gold cigarette case as a prize to the association member obtaining the largest number of applications for membership up to the time of the annual meeting of the association, which is to be held this year in Chicago on Wednesday, March 20.

* * *

Endicott Rantoul, the new vice-president of the New York Division of the Salesmen's Association of the Paper Industry, presided for the first time at the regular weekly luncheon and meeting held on Monday at the Canadian Club. There wa sa lively discussion of plans for the coming year, which should prove a very successful one under Mr. Rantoul's leadership.

* * *

Holders of common stock of Celotex Company of record March 6 will be issued warrants entitling them to subscribe to additional stock at $65 per share in the ratio of one new share for every seven shares held as a result of action taken at a special meeting of the board of directors. A block of 24,400 unissued shares has been authorized for sale for this purpose. Proceeds will be used in enlarging that company's plant facilities. Of an authorized 500,000 shares of common stock there are now outstanding 170,706 shares.

* * *

Report of Container Corporation of America and subsidiaries to the New York Stock Exchange for year ended December 31, 1928, show snet income of $915,929 after interest, depreciation, federal taxes, etc., equivalent after subsidiary and preferred dividends, and after allowing for participating provisions of the shares, to $1.24 a share on 273,775 shares (par $20) of Class A stock and to 62 cents a share on 588,289 no-par shares of Class B common. This compares with $1,409,748 or $2.26 a share on 252,164 Class A shares and $1.13 a share on 508,289 Class B shares in 1927.

* * *

The Lily-Tulip Cup Corporation has been formed to acquire business of Tulip Cup Corporation and Public Service Cup Company. New company will have authorized capitalization of $1,000,000 of preferred, of which $300,000 presently will be outstanding, and 250,000 shares of no-par common, of which 183,000 shares will be outstanding. The corporation will assume $225,000 6 per cent five-year notes of Tulip Cup Corporation. Henry Nias, who has been president and general manager of Public Service Cup Company, will be president and general manager of the new corporation and Simon Bergman, president of Tulip Cup Corporation, will be chairman.

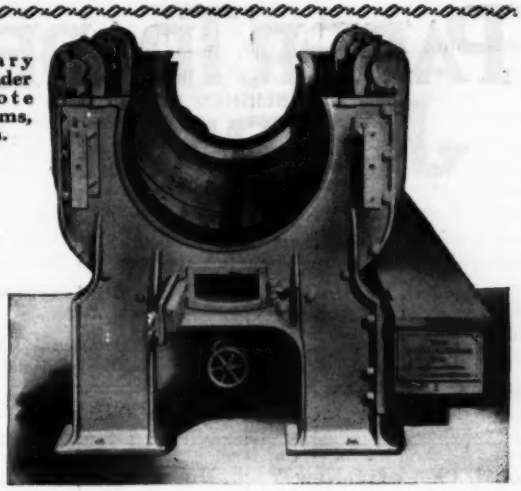
* * *

The United States Customs Court has just handed down a very important decision in what is known as a domestic protest. In this decision Judge Sullivan rules that cellophane sheets, from 34 to 38 inches in width and 1,000 or more meters in length, composed of more than 80 per cent of pure cellulose, more than 11 per cent of glycerine, and more than 7 per cent of other ingredients, such as sulphur, ash and water, made into finished articles, are dutiable as compounds of cellulose in sheets made into finished articles, under paragraph 31, tariff act of 1922, at 60 per cent ad valorem, rather than at 25 per cent under paragraph 42 by similitude to manufactures of gelatin. This domestic protest was brought in the name of the du Pont Cellophane Company, New York, who are successful in having the 60 per cent rate imposed as against the rate of 25 per cent which has prevailed. The importers vigorously contested the higher duty, which is quite a blow to them. It is likely that appeal will be taken to the United States Court of Customs Appeals in Washington.

"M & W" Rotary Screen

with important new features

View of Rotary Screen with cylinder removed. Note divided diaphragms, large openings.



Divided Diaphragms. Each diaphragm is divided into two sections, which move in opposite directions. The resulting balanced movement avoids all side strain on the cylinder, requires less power, and increases the screening capacity.

Discharge Openings at both ends of cylinder are much larger.

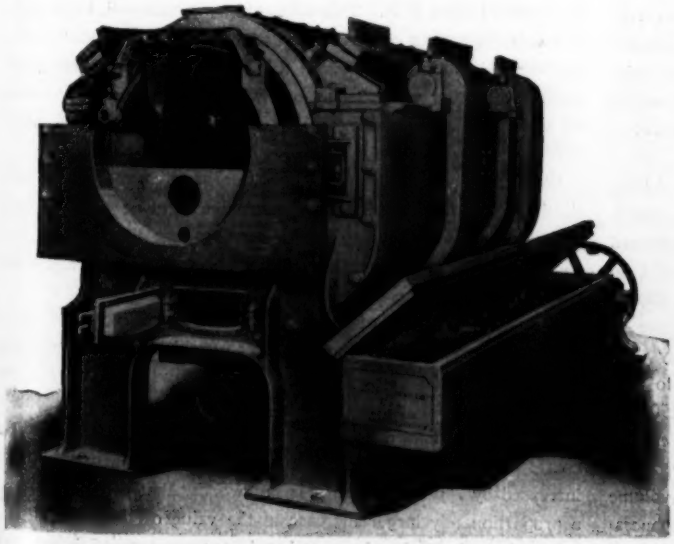
The "M & W" Rotary Screen now being placed on the market has been redesigned and built from practical paper mill experience. Recent improvements are fully covered by United States and Foreign Patents.

No Dead Stock in Cylinder. Improved discharge of stock from both ends of cylinder to flow box.

No Dead Stock in Vat. Pockets are prevented by diaphragm action and automatic flushing outlet.

No Packing Troubles. It is impossible for lumps *to get into screened stock.*

Note enclosed and accessible main drive, showerpipe, washout door for cleaning.



Self-Oiling Bearings. Shaft bearings and eccentrics are self-oiling, enclosed and protected from water.

New Shower Pipe—the Moore & White "Criss Cross" pipe that clears the screen plates so effectively.

Increased Capacity — Less Power — Reliable Operation at Low Cost

THE MOORE & WHITE CO.
PHILADELPHIA, PA.
N. PHILA. STA. PENNA. R.R.
PAPER MILL MACHINERY

WRITE FOR NEW SCREEN BOOKLET

PAPER TRADE JOURNAL
ESTABLISHED 1872

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Vol. LXXXVIII New York, February 28, 1929 No. 9

RECORD YEAR IN PAPER EXPORTS

United States paper exports during the past year, for the first time since the world-wide business depression in 1920-1921, reached and passed the $30,000,000 mark during 1928, according to the Paper Division of the Department of Commerce. Compared with 1927 this figure represents an increase in value of 15 per cent and with the annual average of the five previous years an increase of more than 20 per cent. An encouraging feature of the 1928 exports has been the consistent rise from month to month compared with preceding years. Far from showing an inclination to fall off, shipments for the fourth quarter exceeded those of the preceding three months by 12 per cent and of the corresponding quarter in 1927 by 21 per cent.

From the standpoint of volume, an even greater gain was undoubtedly realized since most items on the paper schedule show a proportionately larger gain in quantity than in value. This holds true not only in regard to the smaller items but also for the leading classes and for those in which American paper exporters were able to increase their sales to the greatest extent during 1928.

While writing, surface-coated, and uncoated book papers registered the heaviest gains, nearly all classes shared in the increased business last year, the only notable exceptions being news print paper and paper bags. Exports of both of these classes, which failed to attain the level of 1927, improved considerably, however, during the last quarter of the year.

There was a general increase in printing paper exports during the past year, except for news print which dropped from eighth to eleventh place in the value of shipments. Exports of uncoated book papers rose from 16,044,000 pounds to 24,510,000 pounds, an increase of 50 per cent; cover papers increased by nearly 25 per cent; and surface-coated papers by 85 per cent. The volume of exports of the last-mentioned item have increased steadily during the past five years, shipments which in 1924 amounted to only 3,358,000 pounds having risen by successive stages to 5,903,000 pounds by the end of 1926 and 5,903,000 pounds by the end of 1927. The 1928 shipments of 11,157,000 pounds were nearly double those of the preceding year, and more than three times the volume of those made during 1924. Exports of uncoated book papers show a greater tendency to rise and fall from year to year than has been the case with surface-coated papers. Nevertheless, shipments of these exceed any previous twelve months period since 1924 and are only 2,000,000 pounds short of the 1923 shipments.

News print exports, on the other hand have been steadily falling since 1925, when they totaled 45,476,000 pounds. In the succeeding year there was a drop to 38,518,000 pounds, followed by further declines in 1927 and 1928, the latter year's shipments of 22,781,000 pounds representing only about half of the 1925 exports. The heaviest losses were sustained in the Cuban market, where imports from the United States dropped from 18,272,000 pounds in 1925 to 6,807,000 pounds in the following year. Since that time there have been further declines, the 1928 shipments to that destination reaching less than 3,800,000 pounds. Shipments to the other Latin American markets and to the Far East, particularly China and Japan, have also shown a downward trend during the past few years.

The greatest advance made by American paper exporters during the last few years, however, has been in writing papers, the 1928 exports having been nearly twice those of the preceding year and six times those of 1924. While shipments of this particular item fluctuate considerably from month to month, it is noteworthy that the last quarter's shipments are not only double those of the corresponding quarter in 1927 but also exceed those of the previous three months by 40 per cent. The increase in the volume of shipments, however, has been accompanied by a corresponding decline in their average value, which dropped from 17½ cents per pound in 1925 to 16 cents in 1926, 14½ cents in 1927, and 11 cents in 1928.

Exports of papeteries have increased slightly from year to year, while exports of envelopes have held fairly steady at around 2,500,000 pounds annually.

Exports of writing papers, exclusive of papeteries and envelopes, now represent nearly one-tenth of the total exports in the paper group and stand first from the standpoint of the value of the product.

Exports of wrapping papers have not made any notable advance from year to year, but still on the whole show a distinct upward trend. Proportionately the largest gains have been registered in greaseproof and waterproof papers, shipments in these lines having doubled since 1924. This class of paper, however, represented somewhat less than one-tenth of the total wrapping paper exports in 1928 and did not even reach this proportion in previous years. Exports of other wrapping papers, which comprise a wide variety of products, have usually registered an increase of 3,000,000 to 5,000,000 pounds annually, or 10 to 15 per cent.

Exports of paper bags, on the other hand, have been steadily declining since 1925, when they reached a total of approximately 13,000,000 pounds. During the succeeding year there was a drop to 11,534,000 pounds, while 1928 shipments recorded a further decline to 9,155,000 pounds.

With the exception of vulcanized fiber, which increased by 30 per cent, boards rank among the items in which the smallest gains were recorded during 1928. Exports of box board were about 12 per cent and of other paper boards and straw boards about 10 per cent higher than during 1927, while in neither case was there a corresponding rise in value. Exports of bristols and bristol boards increased by 7 per cent and it is noteworthy that the latter shows a proportionately larger increase in the value of the shipments.

Board products fared somewhat better, exports of boxes and

cartons having increased by 20 per cent, wall boards by 35 per cent, and filing forms, index cards, etc., by 45 per cent. Shipments of boxes and wall boards, which showed a consistent upward trend from the early part of the year continued this improvement down through the last three months of 1928.

Exports of paper base stocks from the United States, while relatively unimportant compared with imports, have been slowly increasing from year to year, the 1928 shipments reaching a total value of $6,103,726 as against $5,412,352 in the preceding year. The largest items are sulphite wood pulp, shipments of which have totaled over $1,000,000 annually during the past few years, and rags and other paper stock, which in 1928 reached a total of $4,103,288, an increase of 20 per cent over the preceding year. A considerable portion of the latter item, however, is believed to consist of shipments of over-issue newspapers, which are used in various countries of the world as a cheaper substitute for wrapping paper.

Imports of paper and paper products into the United States increased slightly in value during 1928, due principally to the larger receipts of standard news print paper, which form the bulk of the incoming shipments. Imports of wrapping, surface-coated, and tissue papers and of paper boxes were also larger than during the preceding year, but these gains were more than offset by decreases in such items as wrapping, cigarette, and hanging papers, pulp boards in rolls, and printing papers other than news print. Total imports during 1928 were valued at $156,384,548, of which $139,410,918 represented 1,925,775 tons of standard news print, and $16,973,630 other classes of paper and board. Imports of the latter item during 1927 were valued at $17,882,559 while news print imports were valued at $131,482,784.

Imports of paper base stocks into the United States during 1928 were on the whole about on a level with the preceding year. There was a slight shrinkage in the volume of pulpwood receipts, and imports of bleached sulphite pulp also fell off about 10 per cent compared with those of the preceding year. Imports of unbleached sulphate, on the other hand, increased by 12 per cent and of unbleached sulphite by 4 per cent. Proportionately the heaviest increases occurred in imports of rags and waste stocks, which totaled 294,363 tons as against 250,846 tons in 1927. Canada and Sweden, as usual, supplied between 70 and 75 per cent of the sulphite pulp and between 85 and 90 per cent of the sulphate pulp. Minor sources of supply were Finland, Norway, and Germany.

Water Power and the Large Paper Mills

The wisdom of the Ferguson Government developing water powers in Northern Ontario for the purpose of supplying paper mills and large mines with electric energy, was questioned in the Ontario Legislature last week by the Hon. James Lyons, Conservative member from Sault Ste. Marie, and former Cabinet Minister of that government. And not only did Mr. Lyons spring a surprise on the House by taking the stand, but he also defended at length the action of the voters of Sault Ste. Marie who turned down the Hydro Commission for the Great Lakes Power Company.

"I question," said he, "just how far a Government really ought to go in the development of water power in Northern Ontario for the purpose of supplying paper mills or large mines with electric energy. They are large institutions and the Province gives them power at cost, and finances those institutions by developing power for them. I question whether the Government is justified in going to that extent." Those strong, powerful organizations, he felt, should well be able to finance their own power development.

F. L. Carlisle Gives $100,000

One of the latest gifts to St. Lawrence University is an appropriation of $100,000 from Floyd L. Carlisle, president of the St. Regis Paper Company, for the promotion and teaching of the various phases of forestry. It was announced that the gift would be payable at the rate of $20,000 a year and would be used by the university in the study of forestry although its use would not be restricted to the formal teaching of that subject. In confirming this latest appropriation Richard E. Sykes, president of the university, said:

"For many years I have been interested in the subject of forestry for the need has been apparent. My earliest boyhood recollections are of the extensive and beautiful forests of this region. Immediately back of the farmhouse in which I was born there stood an impressive pine forest. I shall always remember the spectacular and terrible fire that in a few days utterly destroyed a portion of it, the flames extending to the tops of great trees and making them look like torches lifted high in the air. In those days the smoke from the Adirondack fires at dry seasons of the year annually filled the atmosphere. Whenever in the last twenty-five years I have spent vacations in the Adirondacks I have been distressed by what appeared to be the ignorant and careless way in which the forests were being cut down with no regard for the future. The whole paper industry at least is imperiled and towns once prosperous are threatened with premature decay. Canada is being chiefly drawn upon to furnish wood for this industry and even in that country it will be necessary every year to go farther back to secure the supply. Permanent relief can come by the restoration of the forests. Not only is the preservation of the supply of timber involved and the beauty of the landscape but the water supply, the climate and agriculture interests as well.

"It will afford me the greatest pleasure to have a part in restoring the forests although the fruits of such labors will not come in full measure for many years. The recent action of the Board of Supervisors of this county relating to reforestation has been a great encouragement and the University hopes to cooperate with them and with the people of the North Country increasing the public sentiment so necessary to the restoration of the forests. Personally I and the trustees of the University are most appreciative of this gift and we trust that we shall make such wise use of it that within five years a department of forestry will be firmly established and be of the greatest practical service to the people of Northern New York."

Changes in Mine & Smelter Co.

At a meeting of the board of directors of the Mine and Smelter Supply Company, manufacturers of the Marcy Open End Rod Mill, January 22, A. H. Seep, of Denver, Colo., was elected president.

J. H. Fennessy is retiring as president after twenty-five years service as the active head of the business, but continues as a director of the company.

Clark Grove was elected executive vice-president and will move to Denver, where the general offices of the company will be located.

Mr. Seep and Mr. Grove have been associated with the company continuously for the past twenty-seven years.

H. J. Gundlach will continue as general manager of the merchandising division of the company, in charge of the general supervision of the stores and warehouses at Denver, Salt Lake City, Utah, and El Paso, Tex. The company distributes from these branches general machinery, mill supplies, electrical apparatus and supplies, assay and chemical equipment and supplies.

O. H. Johnson will continue in charge of the Marcy Mill Division of the company which handles the manufacture, engineering and sales of Marcy Mills, Wilfley Tables and other products manufactured by the company.

A New York sales office will be maintained at 225 Broadway. J. P. Bonardi will continue as manager of the New York sales office.

ELECTRO BLEACHING GAS CO

MANUFACTURERS OF

Liquid Chlorine

9 EAST 41ST STREET

NEW YORK

E. D. KINGSLEY
PRESIDENT

February 18th 1929

To the Convention of the
American Paper and Pulp Association:

The past twelve-month has been fruitful of progress in the paper industry.

Yet it is an inspiring fact, and one which is essentially characteristic, that the paper industry never rests upon its laurels. On that you are to be felicitated.

It is not too much to predict that the problems which will be encountered the coming year, and it is inevitable that they will arise, will be treated in the scientific spirit typical of past operations.

That leads me to express the gratification of the E B G organization that our cooperation in forwarding the interests of the industry has been so generously appreciated. We thank you, and renew afresh our pledge of service to the full extent of our capabilities.

That the industry is on the threshold of still greater accomplishment is our hope and belief.

Cordially yours,

ELECTRO BLEACHING GAS COMPANY

E. D. Kingsley,
President.

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

Quality Control in the Sulphite Pulp Industry. Aleks Lampén. World's Paper Trade Rev. 89, 1058-1064, 1082-1088 (March 30), 1234-1242, 1246-1250 (Apr. 13, 1928); Paper Maker & Brit. Paper Tr. J. 75, 369-375, 388D-388H (Apr. 2, 1928); Paper Mill 51, No. 16, 20-26 (Apr. 21, 1928); Pulp Paper Mag. Can. 26, 629-632 (May 10, 1928). A discussion of the importance of standardized tests for controlling the quality of sulphite pulp, and of the chief factors involved in the determination of the strength of pulp bringing out the merits of the Lampé steel ball mill for beating the pulp prior to making into test sheets.—A.P.-C.

Proposed Standard Method for Strength Testing of Unbeaten Pulp. O. M. Halse, Kr. Mcrch, A. Borresen, S. Samuelson. Papir Jour. No. 21, 266 (1927). A criticism of the TAPPI method which has been proposed by the Association of American Wood Pulp Importers as an international standard method. The Norwegian committee recommends that acceptance of the method as an international standard be deferred until Scandinavian mills have thoroughly proved its usefulness and reliability. More definite information is required as to (1) whether the method is for control or specifications or both, (2) whether wet or dry pulp is to be used and if the latter, what time of wetting is to be allowed before testing, (3) what types of pulp does method apply to, (4) more specific details of procedure in sheet formation, and (5) duplicability of results on same pulp in various mills and countries.—C.E.P.

Calendering Paper. A. L. Dawe. Eng. pat. 286,020. In the calenders of paper machines finishing rolls are provided, mounted on the ends of supporting levers. The finishing rolls are driven at a different circumferential speed from that of the rolls in the calender stack, through chain gear and shafts passing through the fulcrums of the levers supporting the finishing rolls, each of which is driven by a separate motor. The pressure of the finishing rolls on the calendar rolls is adjusted by worm gear operated by hand wheels.—A.P.-C.

Device for Regulating the Tension of Paper Webs. F. Fuchs. U. S. pat. 1,656,111, Jan. 10, 1928. In order to automatically maintain the tension of the web constant when unwinding, irrespective of irregularities in the braking action of the brake band on the brake pulley on the axle of the paper roll, of the reduction in the diameter of the roll during unwinding, or of irregularities in the tightness of the winding of the roll itself, the web is made to slide over a movably mounted device which is provided with means adapted to hold the device in a determined position for a determined tension of the web.

Theory and Calculation of Paper Machine Driers. Anon. Papier 31, 85-87 (Jan. 1928). Two formulas are given, with example of their application.—A.P.-C.

Paper Machine Drier. E. van Asten. Fr. pat. 630,118. Rotating pipes with suitably disposed slits are provided to blow air into the machine to carry off the vapor-laden air. The slits in the pipes are preferably disposed along helical lines so that the air blasts act somewhat like Archimedes' screws in carrying off the vapors. If there is not sufficient room to provide special pipes, the felt rolls may be used for the purpose, being made hollow and with slits to allow of blowing air.—A.P.-C.

Paper Testing at the Government Printing Office. E. O. Reed. Paper Trade J. 86, No. 15, 42-48 (Apr. 12, 1928). A report of the work carried out in 1927 by the Division of Tests and Technical Control of the U. S. Government Printing Office.—A.P.-C.

Standard Method of Measuring Bulk of Paper. Anon. Tech. Assoc. Papers XI, 192 (June 1928). An investigation into the influence of various factors on the results obtained with the Perkins pressure bulker showed that: (1) Above 30 pounds per square inch the coefficient of compressibility (change in bulk of an inch pack per unit change of pressure) is small and practically constant for a given paper. (2) Indicated bulk is independent of the size of the pressure surfaces within limits of 1 to 5 square inches. (3) The maximum observed difference in bulk attributed to the size of the sheets (within limits of 2.25 to 8 inches square) was less than 0.25 per cent. (4) Greatest accuracy is obtained when bulk is determined on packs containing 250 to 500 sheets. (5) The relative bulking values of different kinds of paper are different for high and low pressures; but although the error in measuring bulk is less when high pressures are used, the practical significance of bulk measurement may require a low pressure, since the bound volume as used is under slight pressure. A tentative standard procedure is outline.—A.P.-C.

Measurement of Degree of Sizing in Paper. E. Oman. Svensk Pappers-Tid. 30, 591-3 (1927). Ink streaks made by drawing pen, set for a certain width, are measured by an ocular micrometer. The percentage of spreading of the ink gives a numerical factor relating to the degree of sizing.—C.E.P.

Report on Permeability of Paper to Liquids*

By Allen Abrams[1], Chairman

During the past year your Committee has endeavored to work toward standardization of sizing tests for paper and also for a satisfactory greaseproof test. With the willing co-operation of the members of this subcommittee, to whom the chairman wishes to express deep appreciation, tests on a number of different papers have been made by various laboratories to see how satisfactory checks could be obtained.

Study of Method of Measuring Degree of Internal Sizing

The Bureau of Standards' work in measuring internal sizing has indicated that the curl test and the dry indicator test offered the most accurate methods for determining this property. We therefore decided to employ these two methods and establish which of the two offered the more satisfactory procedure.

Four samples of paper were selected for these tests as follows:

Sample No. 1: Slack sized bleached sulphite sheet, weight 23 lbs., caliper .0023 (weight 24x36—480).

Sample No. 2: Bleached sulphite mimeograph bond, medium sizing, weight 32 lbs., caliper .0034.

Sample No. 3: Bleached sulphite register paper, well sized, weight 34 lbs., caliper .0031.

Sample No. 4: Bleached sulphite bond, medium sizing, weight 35 lbs., caliper .0032.

These sheets were sent to each of the co-operating members requesting that they make five tests on each sample, using both the curl test and the dry indicator test. Where the Carson curl sizing tester was available it was to be used on the curl test; and where the Penescope was available it was to be used on the dry indicator test. When the instruments were not available, the flotation methods were to be used. The following detailed methods of carrying out the tests were employed.

Curl Sizing Test

Where the curl sizing tester is available carry out the test according to the instructions accompanying the instrument. If this instrument is not available carry out the test as follows:

Cut a piece of paper 2x3 inches with the short dimension in the machine direction. Cut this piece diagonally into two triangular specimens. Crease the specimen about ½ inch to 1 inch (depending on how much the paper curls) from the shorter side and parallel to it. Bend the specimen along this crease so that the two portions are at right angles to each other.

Fill a beaker with water at 70 degrees F. to within one-half inch of the top. Place the specimen on the water so that the narrower portion rests on the water and the pointed part projects upward and rests against the edge of the vessel. Start the stop watch at the instant when the specimen touches the water. The wetted portion of the specimen begins to curl, as a consequence of which the projected point reveals and magnifies the curling movement by approaching and then receding from the edge of the vessel. Stop the watch at the instant when the pointed portion of the specimen reverses its direction. Record the elapsed time as the sizing test.

Test at least five specimens and record the average. If a constant humidity room is available carry out the test at 50 or 65 per cent humidity.

Dry-Indicator Sizing Test

Prepare the indicator power by thoroughly mixing one part of readily water soluble dye, e.g. Pontacyl Scarlet RR, with fifty parts of dry powdered sugar. The sugar should be dried by desiccation rather than heating as the latter is likely to sinter it so that it does not sift readily. Place this mixture in an aluminum salt shaker wherein the top has been replaced by about 70 mesh wire. Keep the top air-tight when not in use. Another method consists in using a fluted sieve similar to that illustrated in Fig. 23c, page 80 of TAPPI Paper Testing Methods (1928).

If the Penescope is available, cut the sample and carry out the test according to the method accompanying the instrument. Otherwise, use the following procedure:

Cut a specimen of paper about 2½ inches by 4 inches, then crease it crosswise about one inch from the end; fold this under and then make a crease near one edge at right angles to the first one so as to stiffen the specimen and prevent it from curling.

Either dust the dry-indicator powder on to the paper by gently tapping the shaker or by allowing the sieve to drop on to the sheet from a height of about ¼ inch. Thus part of the powder will lie over a single thickness of paper, and part over the double thickness provided by folding the specimen under. This latter part of the indicator retains its original neutral color and serves as a reference mixture to assist in judging when the color change occurs in the indicator overlying the single thickness.

Float the specimen on water at 70 degrees F. Start the stop watch as the specimen touches the water, and stop the watch when the color begins to appear in the indicator as a result of the transudation of moisture. Record the time intervals as the sizing test for the paper. Test at least five specimens by this method and take the average. Where the time interval is greater than one minute it is necessary to protect the transuded moisture from evaporation by means of a glass cover, as outlined in "Testing Paper for Permeability to Liquids," Paper Trade Journal, March 5, 1925.

TABLE 1
SIZING TESTS BY CURL TEST METHOD
(All tests at 20 degrees C.)
CT—Carson Curl Sizing Tester Method.
F—Flotation Method.

Sample No.		No. 1		No. 2		No. 3		No. 4	
Tester	Relative Humidity	F	CT	F	CT	F	CT	F	CT
A	75.%	..	4."	..	16."	..	16."	..	23."
B	58.	1."	..	19."	..	19."	..	28."	..
C	65.	3.	..	15.	..	18	..	21.	..
D	65.	1.	2.	16.	15.	17.	18.	25.	22.
E	50.	1.	..	13.	..	16.	..	20.	..
F	65.	..	2.	..	12.	..	15.	..	20.
G	61.	1.	..	11.	..	15.	..	21.	..
H	65.	1.	..	13.	..	15.	..	20.	..
Average		1.3	2.7	14.	14.	17.	16.	22.	22.
Max. % dev. from av.		130.	50.	35.	15.	12.	12.	21.	5.

Grand average of "Maximum % Deviation from Average" on four samples:
Carson curl sizing tester..... 20.%
Flotation method 50.%

TABLE 2
SIZING TESTS BY DRY INDICATOR METHOD
(All tests at 20 degrees C.)
F—Flotation Method.
P—Penescope Method.

Sample No.		No. 1		No. 2		No. 3		No. 4	
Tester	Relative Humidity	F	P	F	P	F	P	F	P
A	75.%	7."	..	32."	..	31."	..	29."	..
B	58.	..	1."	..	61."	..	56."	..	86."
C	65.	3.	..	31.	..	37.	..	43.	..
D	65.	3.	13.	24.	35.	26.	40.	30.	48.
E	50.	..	3.	..	29.	..	33.	..	42.
F	65.	3.	..	26.	..	23.	..	31.	..
G	61.	2.	..	18.	..	21.	..	24.	..
H	65.	3.	..	18.	..	22.	..	28.	..
Average		3.5	5.7	25.	42.	27.	43.	31.	59.
Max. % dev. from av.		100.	128.	28.	45.	37.	30.	39.	46.

Grand Av. of "Max. % Deviation from Average" on four samples:
Flotation method ..... 51. %
Penescope method ..... 64. %

When the results were received it was found that a few laboratories had used a temperature other than 20 degrees C. and since this is of great importance in the time of penetration these data were omitted from the comparison. The five tests made on each sample were averaged and the average results used in the accompanying tables No. 1 and No. 2.

It should be noted, however, that there is some variation in the humidity in which the tests were run. Since all these were relatively thin papers, and therefore yield quick tests, it is likely that this difference in humidity is not as important as when heavier papers, of long test, are to be examined.

Considering the results obtained in the curl test it is to be noted that, with the exception of sample No. 1, the average results

* Presented at TAPPI Annual Meeting, New York, Feb., 1929.
[1] Marathon Paper Mills Co., Rothschild, Wis.

obtained by the flotation method and by the Carson curl sizing test agree very well. However, since relatively few tests were made with the Carson tester, it is desirable to have this work repeated so that at least six tests are obtained by each method. In tests on the same paper by different laboratories there is a considerable variation in the results, although the Carson tests appear to give better concordance than the straight flotation method. This is undoubtedly due to the effect of standardization in the mechanical operation of the tests.

The dry indicator method results show that about the same degree of uniformity is obtained either by the flotation method or by use of the Penescope. There seems to be a constant relation between the time required on straight flotation and that in the Penescope. Not enough tests were made with the Penescope to permit of any final conclusion on this.

In general then, it can be stated that the methods obtained by either procedure under the dry indicator test and by the curl flotation test are about equally consistent; but that the Carson curl sizing tester appears to give more uniform results. Since all these tests were run on relatively thin papers, it is very desirable that this work be amplified to include heavy papers so that a standard method may be drawn up to cover the whole range in which sizing tests are to be made.

Study of Method for Measuring Greaseproofness

Four samples of paper were selected for testing, as follows:

Sample No. 1: Parchment, weight 24 lbs. (24x36—480), caliper .0021.

Sample No. 2: Bleached greaseproof, weight 29 lbs., caliper .0023.

Sample No. 3: Unbleached greaseproof, weight 34 lbs., caliper .0029.

Sample No. 4: Bleached greaseproof, weight 33 lbs., caliper .0028.

These were sent to the members of the subcommittee with the request that they make five tests on each sheet by the two following methods for testing greaseproofness which are along the lines of those suggested by H. A. Smith in his report in Technical Association Papers, Series XI (1928), No. 1, page 23. In fact, the principal suggested charge is in the endpoint of the test, wherein six colored spots are taken rather than a single one; the reason for this being to get away from false endpoints occasioned by specks of dirt and holes and yet to show a lowered test if there are many specks and holes.

Materials Required

METHOD A

Iron pipe 1½ inches long by 2½ inches diameter having one ground end.
Karo corn syrup or thick, hot animal glue for sealing samples.
Ground glass plates.
Adjustable mirrors.
Sample of paper to be tested 3½ by 3½ inches.
Bleached sulphite paper 30-inch—40-pound weight—3½ by 3½ inches.
Turpentine, dried over anhydrous calcium chloride, to which has been added oil soluble dye (such as "Newport Oil Red B," made by Newport Chemical Company, Passaic, N. J., or duPont Oil Red made by the duPont Company, Wilmington, Del.) in the proportions of 2.5 parts of dye by weight to 1,000 parts turpentine.

METHOD B

Penescope.
Samples of paper to be tested—2½ inches in diameter.
Bleached sulphite paper 20-pound—40-pound weight—2½ inches in diameter.
Colored turpentine as under Method A.

Testing Grease Resistance

Method A

Cut 5 representative samples of the paper 3½ by 3½ inches. Cement each sample with Karo corn syrup or thick animal glue to the end of the iron pipe, by first dipping slightly in the adhesive and then pressing the pipe firmly against the sample. Now place the sample on the ground side of a ground glass plate so supported that an adjustable mirror may be placed beneath it, thereby permitting an easier view of the sample; or on a piece of the bleached sulphite paper. Note the time and then pour the colored turpentine into the pipe to a marked height of 1.5 centimeters from the bottom. *Maintain the temperature throughout the test at 20 degrees C.*

When the ground glass is used, observe the under surface of the test sheet continually to detect the appearance of dark spots. When six spots (each at least the size of a pin head) have appeared, consider this the endpoint, note the elapsed time and record this as the "greaseproof test."

If paper is used beneath the greaseproof sample, note the time required for six colored spots (each at least the size of a pin head) to appear on the surface and record the time elapsed. If the test runs for over an hour, cover the cylinder to prevent evaporation of turpentine.

Test each of the 5 samples, average and record the results, in minutes and fractions of minutes as the "greaseproof test."

Method B

Cut 5 representative samples of the paper 2½ inches in diameter. Place the sample in the Penescope as follows: First lay a gasket inside the lid. This gasket is preferably made of thin sheet asbestos composition similar to that used in packing for high pressure steam. This resists turpentine and gives a tight fit. Next, place the ground glass plate on this gasket and then over the plate lay a piece of the bleached sulphite paper followed by the greaseproof sample. Lay another gasket on the greaseproof sheet and then screw the lid firmly to the chamber of the Penescope, holding the ground glass plate against the chamber while attaching the lid.

If the test is conducted in a constant temperature room at 20 degrees C. no temperature control is necessary but if it be conducted in an ordinary room it is desirable to use the jacketed Penescope.

Maintaining the temperature at 20 degrees C. introduce quickly the colored turpentine through a funnel and tube connected into the bottom opening of the instrument until it rises in the glass tube above the instrument. Take the time from the moment the turpentine first comes in contact with the paper until six spots (each at least the size of a pin head) have appeared on the white bond paper. The elapsed time represents the "greaseproof test."

Empty the Penescope by removing the tube and allowing the turpentine to flow out; or, if a three-way cock is used, empty by a proper turning of the cock.

The results obtained are as follows:

TABLE 3
GREASEPROOF TESTS USING TURPENTINE

Sample No.		No. 1	No. 2	No. 3	No. 4
Tester	Temperature		Method A (Iron Pipe)		
A	20 degrees C.	0 min.	9.0 min.	6.0 min.	22.5 min.
B	20	0	0.4	0.6	1.3
C		0.1	8.5	12.0	32.0
D	20	0	0.6	1.0	2.2
E	20	0.1	12.0	4.8	12.4
F	20	0	20.7	24.4	1.2
G	30	0.2	12.3	12.3	38.0
H	23	0	0.6	10.6	39.2
Average		0	8.0	9.0	18.6
Max. % Dev. from Average			159.	171.	111
		Method B (Penescope)			
A	20	0	8.1	4.9	15.0
B	20	0.1	1.2	1.4	4.8
G	20	3.1	11.1	15.3	45.1
Average		1.1	6.8	7.2	21.6
Max. % Dev. from Average			82.	112.	109.

Grand Average of "Maximum % Deviation from Average" on three samples
Method A 147.%
Method B 100.%

Comments of Tests as Made by Cooperating Members

A. "Penescope more convenient, less messy and permits much easier view of penetration."

B. "All tests made with ground glass rather than white paper. There is no comparison between ground glass and white paper end points. End point on this kind of test very unsatisfactory."

C. "Our objection to the ground glass method is the uncertainty of the end point. . . . I feel that it would be a better criterion of the practical value of the paper as a greaseproof paper if in interpreting results (i.e. using the bleached sulphite sheet for registering penetration A.A.) the total area of colored spots rather than the number of spots was taken as the end point."

D. "I have never been much in favor of using turpentine for trying to determine what the paper will do when in contact with an entirely dissimilar material as grease. Did you know that the U. S. Revenue Assay Laboratories make their tests of greaseproof paper using oleic acid?"

F. "I feel that any assignment of definite numerical values is

apt to be quite misleading and it seems to me the best that can be done is to adopt a general classification of greaseproof papers —those which are completely penetrated at once; a second group which holds up for perhaps a few minutes up to half an hour or so; a third group which is free from any serious penetration for a few hours, and so on up to the class which includes papers perfectly greaseproof over an indefinite period of time—if such there are."

G. "One method B, Table No. 3, first spot appeared after 3 minutes while it took 50 minutes for 6 spots to develop. This was true with nearly all tests under method B."

H. "In the case of method A, it was found that the end point could be determined more readily with the ground glass than with bleached sulphite paper."

Discussion of Results

Considering method A, note that the only paper showing concordant results is No. 1, a sheet which is instantly penetrated by turpentine. On the other papers, note that the maximum variation from the average time of penetration may be as high as 170 per cent, while one tester may report a time on a sample up to 50 times as long as another tester. In other words, the results are far from concordant. You will find also that one tester may vary as much as 100 per cent in the time of his individual test.

The results obtained by method B are not numerous enough to warrant any complete statement. They show, however, a maximum variation from the average of 110 per cent; and that one tester may vary by as much as 30 times in his test from that obtained by another tester on the same paper.

It should be pointed out that part of the difference in these tests may be due to the fact that the results obtained with the use of sulphite paper to record the penetration spots are different from those obtained when the dark spots alone are used as an end point of penetration.

The comments received from the various laboratories are very interesting and they indicate that a program must be thoroughly discussed, laid out and pursued in order to obtain a standard method. This should include the following:

1. *Selection of a standard testing liquid,* which might be turpentine, oleic acid, coconut oil, peanut oil and the like.
2. *Selection of standard equipment.*
3. *Selection of a suitable end point.* This may be with or without the use of bleached sulphite paper; may be obtained with a single penetration spot, with a definite number of spots or with a certain area of penetration.
4. *Method of grading and reporting.* Is the actual time of penetration to be used or shall the papers be graded into groups? What shall be considered as a good, fair and poor sample?

Conclusions

1. Indications up to the present are that, on thin paper, either the curl test or the dry indicator test may be used with reasonably concordant results, but that the curl test made with the Carson curl sizing tester seems to give the most uniform data. This work should be amplified to cover the whole range of calipers and weights of paper to be tested for sizing.

2. The results on greaseproof tests indicate very wide differences in data obtained on the same paper by the same method. In order to reach any kind of standardization on this test it will be necessary to proceed with the program as outlined in this report.

Fastness to Light of Colored Paper*

By William D Appel[1] and Th. C. Bentzen[2]

The following questions concerning fading of paper were placed before the Committee on Fine and Special Papers.

1. In which way can the fading of paper (the fading of the dye used in paper) be determined?
2. Is the Atlas Fadeometer to be recommended for this purpose or is some other apparatus preferable as a standard?
3. Is it possible with help of such an apparatus to express the degree of fading in proportion to strength of light and time of exposure, or is it only possible to make comparing tests?

Samples of the standard grades of basepaper, each containing a certain amount of the dyestuffs in question, were produced and strips of these samples were arranged side by side under the glass of a photographic printing frame. One end of all the strips was covered with a rather thick and black paper, free from pin holes. The frame prepared in this way was then exposed to daylight for one or two weeks, or if necessary even a longer time, according to season and light intensity. This method proved sufficient to compare the fastness to daylight of the different samples, one against the other. This method may also be used for testing the fastness to artificial light of any colored papers.

Method Used in Textile Industry

In answer to the first question (In which way can the fading of paper be determined?) the relative fastness to light of papers can be determined either by exposing them to sunlight or to carbon arc light.

The sunlight exposure test that has been adopted as standard by the American Association of Textile Chemists and Colorists is as follows: "Samples are exposed to an angle of 45 degrees sunny days only, in a cabinet covered with a good grade of window glass approximately one-eighth of an inch thick, and open at the sides in such a way as to allow free access of air to the samples. The distance between the samples and the glass shall be not less than one-half inch."

The reason for this type of test instead of a continuous exposure night and day on cloudy days, as well as sunny ones, is that it is possible to duplicate results.

The alternative method of exposing the samples to carbon arc light has the advantage of speed but some samples do not fade in this light just as they do in sunlight. It is a fact, however, that some samples do not fade in the light of a north window like they do in sunlight. Either method gives quite satisfactory results in most instances.

The Fade-ometer

The carbon arc lamp referred to in the second question is the Fade-ometer of the Atlas Electric Company. This lamp is as satisfactory for the purpose as any we have worked with. The samples become quite hot in the Fade-ometer and some white papers will turn brown in it. The ventilator fan which can now be obtained with the instrument, helps to lower the temperature. I am inclined to think that if paper samples are to be tested they might be exposed to advantage at a greater distance from the arc than in the ordinary Fade-ometer.

Quantitative Determinations

The method which I have found practicable for following fading quantitatively (question no. 3) is a simplified spectrophotometric method which is described in the American Dyestuff Reporter of January 23, 1928, pg. 49. For the practical standardization of fastness tests, a method which is soon to be put in operation by the Association of Textile Chemists for textiles (and is under consideration by the Lithographic Technical Foundation for printing inks) is to be recommended.

* Presented at Annual Meeting of TAPPI, New York, Feb. 20, 1929.
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[2] Member TAPPI; Chief Chemist, Whiting-Plover Paper Co., Stevens Point, Wis.

Testing Method for Roofing Felt*

By P. W. Codwise [1]

Throughout the industry, there is more or less uncertainty regarding the most suitable tests to apply to roofing felt and the like; therefore, this committee has prepared the following discussion together with test results that may form a basis for further elaboration of such methods.

In 1922 the Prepared Roofing Association adopted a series of tests for such a purpose which have received more or less attention from the saturating plants, but from the standpoint of the paper mills manufacturing roofing felt little has been published covering work in this direction. The committee has, therefore, deemed that such a discussion would be of more than passing interest to the industry.

It is not proposed in this report to go into detail with regard to the test procedure as these are either published in our "Paper Testing Methods" or have been presented recently by the Roofing Felt Committee. We will here show the relations of these tests to each other and to the quality of roofing felt by the presentation of results upon representative samples.

This work naturally divides itself into two parts as follows: First, the usual physical and chemical tests, including fiber analysis, similar to those applied to other paper products. Second, the special tests such as those for saturating characteristics of the product. We will discuss these in order, pointing out where trade customs in connection with roofing felt vary from those in other lines of paper manufacture, and going into sufficient detail in connection with the specialized tests to demonstrate their field of usefulness.

In carrying out this work, a sufficient number of duplicate samples of five different types of felt were selected and samples of each type were submitted to various laboratories for test. The representative results of such tests are tabulated and discussed in this report. In the selection of samples the ordinary range of felts has been included from a light weight felt, sample "A," which contains a percentage of paper stock in its composition, through the medium weight felts, up to the heavy weight grade, sample "C," which consists practically entirely of a good grade of roofing rags. Due to the fact that the medium weight felts are the most important with regard to volume manufactured we have included three kinds of this class, namely two roofing felts, samples "B" and "E," and a somewhat different type of saturating felt, sample "D," of closer formation suitable for use as a base for floor covering.

Weight

The weight may be obtained by one of the various instruments described for this purpose in "Paper Testing Methods" [2] and both the direct reading quadrant type and the beam type with sliding weight are in general use. It is customary in the industry to report the weight of the sheet in pounds per 480 square feet and a scale is generally used whereby the result is read directly by placing a sample exactly 12 x 12 inches in the pan. By referring to the tabulated results it may be seen that the usual weights are between 25 and 85 pounds but, on the other hand, felts are regularly manufactured both below and above these figures. In reporting the weight it should always be stated whether the result is upon an air dry or bone dry sample. The basis weight of a felt is commonly referred to as the "Felt Number" and the air dry weight has been called the "Uncorrected Number" and the bone dry weight the "Corrected Number."

Moisture should be determined in the usual way as described on page 106 of "Paper Testing Methods." In ordinary work such as mill control, it is customary to weigh a larger sample such as a narrow strip from across the machine, or a square foot sample, dry it to constant weight at a temperature of 212 to 220 deg. F., and reweigh rapidly upon removal from the oven; it is especially important in testing roofing felt not to dry the sample at temperatures over 220 deg. F., as otherwise an added loss in weight may occur. It is customary to report the weight as a percentage of the original weight of the sheet. Roofing felt, as a rule, is dried to a low moisture content when made, varying from 3 to 5 per cent; this is due to the fact that the saturating process of manufacturing prepared roofing drives what moisture may be in the felt away and, therefore, moisture is undesirable. However, felt in equilibrium with ordinary atmospheric conditions holds from between 5 to 7 per cent moisture as is indicated in the accompanying table.

Thickness

The determination of thickness of felt is one that should receive careful consideration and the official method found on pages 55 to 56 of "Paper Testing Methods" should be followed as closely as possible. Roofing felt is a comparatively thick and resilient material when contrasted with most paper products and variations in testing instruments at present used to determine thickness are undoubtedly sufficient to cause appreciable differences in the results. In selecting an instrument the specifications as described in our standard methods should be carefully followed and especial care be taken to see that the area of the pressure surfaces is sufficiently large and that the pressure exerted by the plunger is of proper magnitude and uniform at the different readings.

Strength Testing

A variety of methods may be considered for testing the strength. These include the bursting strength, the tensile breaking strength, and the tearing strength. The tearing test is not in general mill use but both the bursting and the tensile are; some mills prefer one and some the other and in certain instances both are used.

The strains to which a felt may be subjected upon the saturating machine are of varied character involving short bends and at times rapid jerks in addition to a straight pull; these strains occur upon the sheet both in the unsaturated condition and while it is wet with hot asphalt; for these reasons all available information regarding the strength of the felt is essential. It is a well known fact that, at least with roofing felt, there is no constant relation between the bursting strength and tensile strength with the grain therefore, in describing roofing felt it is highly desirable to specify both the tensile and the Mullen test results.

Tensile Breaking Strength

The tensile strength test is customarily performed upon a strip of roofing felt exactly one inch wide and preferably six inches in length; great care should be taken to cut the sample exactly with the grain or at right angles to it as the case may be. Where tensile tests are being done regularly, as in mill control, it is highly desirable to have a die or hand-press to stamp out the samples, as greater accuracy may be obtained in this way.

The machines employed for tensile breaking tests are described and illustrated in "Paper Testing Methods," pages 64 to 68. The ones most commonly used on roofing felt are the Scott tester and the Perkins tester. On roofing felt there appears to be very little difference in the results obtained with these two machines. The kind of instrument used should always be stated.

The tensile test result that is usually considered is the one with the grain. Tensile test results on roofing felt rarely exceed a reading of 40 points. For this reason an instrument with a low range is preferable for such work.

* Presented at Annual Meeting of TAPPI, New York, Feb. 20, 1929.
[1] Chairman TAPPI Committee on Roofing Felt and Paper Board.
[2] "Paper Testing Methods"—Committee on Paper Testing. TAPPI 1928, pages 45 to 52.

Bursting Strength

The instruments for determining bursting strength are described on pages 51 to 55 of "Paper Testing Methods" together with the method of test. The Mullen tester is in general use in felt mills and the results reported herewith are obtained with this machine and are the average of tests from both sides of the sheet. The name of the instrument should always be stated.

An instrument having a dial reading not over 80 points is desirable in order to obtain the highest sensitiveness. The usual results upon roofing felt vary from 15 points up to 60 points according to the weight and character of the sheet. It is found that the Mullen test of roofing felt often runs to a higher figure than does the tensile test.

Tearing Strength

In order that a reasonably complete survey may be available of the results of various testing methods upon roofing felt one of the committee members has tested the five felts upon both the regular Elmendorf tearing tester and upon the modified form. We are, therefore, giving these results somewhat in detail.

The tearing test is described in detail on pages 68 to 72 of "Paper Testing Methods" and the modified Elmendorf tearing tester of double the capacity in "Paper Trade Journal" of March 29, 1928,[1] which is described as being especially applicable to roofing felts. The results upon the five felts in detail are given in the following table.

	SAMPLE NUMBER									
	A		B		C		D		E	
	Across grain	With grain	Across grain	With grain	Across grain	With grain	Across grain	With grain	Across grain	With grain
Regular Elmendorf Tester										
Maximum	12.0	8.0	33.0	15.0	37.5	33.0	30.0	17.0	32.0	17.5
Minimum	9.5	5.5	20.5	12.5	23.5	27.0	21.0	14.0	23.0	14.0
Average	10.7	6.8	26.9	13.4	29.5	30.1	25.2	15.8	27.9	15.4
Modified Elmendorf Tester										
Maximum	12.0	8.0	38.0	17.0	38.0	34.0	32.0	17.0	28.0	19.0
Minimum	9.0	6.0	18.0	13.0	28.0	26.0	20.0	15.0	17.0	15.0
Average	10.9	7.2	27.2	15.5	32.4	29.0	24.8	16.4	23.4	17.2

The above figures represent tests on one thickness of the material, as with roofing felts it is customary to tear one thickness only. The figures given above for the regular Elmendorf tearing tester are the scale readings obtained, while for the modified instrument they are the scale readings multiplied by two. All of the above readings when multiplied by sixteen give the tearing force in grams; this latter figure is used herewith in the final tabulation of test results.

It will be noted that in general the average results obtained with the two machines check quite well and also that the variations between maximum and minimum are of the same magnitude with both. The variations in individual readings are quite large, a fact which is explained in a certain measure by the character of roofing felt which consists largely of coarse fiber bundles and which naturally varies considerably in strength from spot to spot. It is this very fact which makes the testing of roofing felt more important and more difficult to standardize.

Ash

An ash test is at times specified for roofing felt and this should be performed by the official method as described on pages 106 and 107 of "Paper Testing Methods." It is generally specified that the ash in roofing felt shall not exceed 10 per cent based upon the moisture free felt.

Fiber Composition

The determination of the fiber composition of roofing felt is a considerably involved microscopic analysis and this subject has received attention for some time by a special sub-committee of D-8 of the American Society for Testing Materials. They have tentatively proposed the dot-count method of analysis using the usual Herzberg stain.

The chief difficulties in this determination are due to the great variety of fibers present in a sample of roofing felt and to the fact that trouble is generally encountered in preparing a stain entirely satisfactory over the entire range of fibers present. In a single sample of roofing felt there will often be found the following varieties of fibers: wool (colored and uncolored), silk, artificial silk, cotton, linen, jute, chemical wood pulp, mechanical wood pulp and various straws. This is only a partial list of the great variety of materials that may be encountered in a single sample.

In view of the thorough manner in which this is now being investigated by the A. S. T. M., we will not go into it further, at the present time.

Determination of Saturating Characteristics

Although the literature upon the subject of testing roofing felt for its saturating qualities is scant yet it is undoubtedly true that a considerable number and variety of test methods have been conceived with this object in view. It is, therefore, hoped that this outline will encourage discussion and finally result in the establishment of generally accepted procedures for this purpose.

Felts may vary widely in saturating properties and the machine conditions under which it is saturated are exacting. The majority of such felt is saturated by passing it in a continuous sheet through a bath of heated asphalt, the temperature of which is maintained in the vicinity of 400 deg. F. The actual time that the felt is immersed in this hot bath is measured in seconds and, therefore, the rate at which the felt will absorb the saturant is of first importance. The ability of the felt to take saturation is undoubtedly the result of several factors among which may be mentioned the amount of voids, or open spaces, within the felt and the character and absorbency of the fibers themselves. The two important conditions that must be met in this connection are, first, that the saturant shall penetrate the sheet with sufficient rapidity and, second, that the sheet shall have the capacity to hold the proper amount of saturant. Although methods have been suggested for determining in one operation the combined results of these factors in the laboratory by means of actual immersion of a test specimen in heated asphalt or in hot oil, yet the most generally accepted procedure appears to be to determine these characteristics independently by separate tests and then to judge the quality of the felt by a consideration of the results of both tests.

Kerosene Test

The "kerosene test" is the generally accepted one for the determination of the saturating capacity. The details of this test were published in "Paper Trade Journal," September 20, 1928. It consists in determining the amount of kerosene the felt will hold within itself and calculating therefrom the theoretical percentage of asphalt the felt can hold. The kerosene test figures are, therefore, generally higher than the actual per cent of saturation obtained in practice, the amount depending upon the saturating rate of the felt and the efficiency of the saturating machine conditions, among which may be mentioned the type of saturant, the temperature of the saturant, and the time of immersion. The kerosene test results upon felt may vary from 150 to 250 per cent, depending upon the character of the product; the average kerosene test is in the neighborhood of 200 per cent.

TABULATED RESULTS OF TESTS ON ROOFING FELT

Sample Number	Weight (air dry sample) per 480 sq. ft., in pounds	Moisture, per cent	Thickness, inches	Tensile Breaking Test (Perkins). 1 inch wide strip. Gage reading, pounds per sq. in.		Bursting. Mullen Test. Points	Tearing Test. Elmendorf. Force in grams		Kerosene Test. (Bone dry sample.) Per cent	Oil Penetration Test. Air dry sam.		Xylol Test (air dry sample), sec.	Densometer Test (Gurley). (Air dry sample) (to pass 400 cc.), sec.
				With grain	Across grain		Across grain	With grain		Felt side up, sec.	Wire side up, sec.		
A.	27.5	6.30	.027	24.5	11.5	24.0	173	112	188	9	13	34	13.0
B.	54.3	5.60	.061	25.5	12.0	29.5	433	232	233	15	19	14	5.5
C.	84.1	5.80	.084	34.0	19.5	48.5	496	473	203	24	32	19	8.0
D.	57.4	5.70	.053	39.0	19.5	41.5	400	258	166	20	24	42	9.5
E.	55.1	5.80	.058	28.5	12.0	33.0	411	261	215	13	17	22	5.5

[1] Paper Trade Journal, March 29, 1928, pages 57 to 60. "Increasing the Capacity of the Elmendorf Tearing Tester," by F. T. Carson and L. W. Snyder.

Oil Penetration Test

A test that has been proposed for determining the rate at which felt will saturate is the "oil penetration test." This test was published and discussed in "Paper Trade Journal," March 1, 1928. It was there shown that a general relation existed between the results obtained from this test and the rate at which a felt would absorb hot asphalt. The oil penetration test consists in floating a sample of felt upon the surface of a bath of light mineral oil of definite viscosity and in determining the time required for the felt to absorb the oil through its surface and to discolor the upper side.

Xylol Test

The "xylol test" is an alternative method for determining the rate of saturation and the details of this method are being presented by the committee at the present time. The xylol test determines the capillarity of the felt toward xylol, a volatile organic solvent, where one end of a strip is immersed vertically in the solvent. The result is reported as the number of seconds required for the solvent to rise a definite height of 3 cm. above the surface of the xylol.

The use of a porosity test has been suggested as a possibility for determining the saturation characteristics of roofing felt upon the theory that the more open the felt the faster the air would penetrate it and likewise the faster the saturant would penetrate and the more saturant the sample would hold. We are, therefore, including results upon the Gurley densometer as a matter of general interest. The figures reported are the number of seconds required by the sample to pass 400 cc. of air. We are using the 400 cc. figure rather than 100 cc. due to the extremely rapid rate at which the air passes through roofing felt.

The results of a committee survey of test methods for roofing felt have been presented, together with a discussion of these methods as they apply to this particular product.

The manufacture of roofing felt presents many variables and the requirements of the felt to meet varying conditions are quite wide. For these reasons definite test specifications and methods that are commonly accepted are highly desirable.

This report is presented as a preliminary survey of the field and with the hope that it will lead to the establishment of accepted test procedures for evaluating roofing felt.

Proposed Method for Quantitative Determination of Pitch in Wood Pulp*

By Roger C. Griffin [1]

If the pulp is sufficiently wet, it shall be separated into thin layers and allowed to dry in the air overnight. If the pulp is too dry for this, it shall be soaked in water, then separated into layers and allowed to dry overnight. The layers shall then be cut into pieces about 2 x 4 inches and 5 grams weighed out for each extraction. Pieces shall be creased alternately parallel to the shorter direction so that they may be closed like a camera bellows. This keeps the surfaces apart in the extractor and facilitates rapid extraction.

Where extreme accuracy is desired the moisture shall be determined on a separate portion of the air dried pulp by drying a weighed sample to constant weight at 100 to 105 degrees C., and the pitch percentages subsequently obtained shall be corrected to the air dry basis by dividing the actual results by $\frac{1-X}{0.90}$, where X is the percentage of moisture expressed as a decimal. For ordinary purposes, however, the strips dried overnight may be considered in the air dry condition.

Five grams of the pulp prepared as previously described shall be placed in a Soxhlet or a continuous extractor connected to an unweighed Erlenmeyer or Soxhlet flask and extracted with sulphuric ether. If a Soxhlet extractor is used, the extraction shall be continued until the liquid has siphoned at least ten times. With a continuous extractor the extraction shall be continued for 4 hours, with the ether boiling rapidly.

The ether solution shall be filtered through a wad of absorbent cotton in the bottom of a glass funnel, washing the funnel and the cotton finally with a little ether, and collecting the filtrate in a weighed Soxhlet flask. The solution shall then be evaporated in the flask, the residue dried on the steam bath until the ether is all removed and finally dried in the oven at not over 105 degrees C. to constant weight. The weight of residue shall be calculated to percentage of the air dry pulp and reported as ether-soluble pitch.

After completion of the ether extraction another unweighed flask shall be placed under the extractor and the pulp sample extracted with neutral ethyl alcohol[3] for 4 hours in a straight extractor or for at least 10 siphonings in a Soxhlet extractor. The alcohol solution shall be filtered through cotton into a weighed flask as previously described, the alcohol evaporated, the residue dried on the steam bath and then to constant weight at not over 105 degrees C. in the oven. The weight of extract shall be calculated to percentage of the air dry pulp and reported as alcohol-soluble pitch insoluble in ether.

NOTE.—In the case of sulphite pulp a separate portion of the prepared sample may be extracted directly with alcohol to obtain the total pitch. In this case the difference between the percentages of total pitch and of ether-soluble pitch is the alcohol-soluble pitch insoluble in ether.

The total pitch shall be reported as the sum of the percentages of the ether-soluble pitch and the alcohol-soluble pitch insoluble in ether.

The samples were prepared from a large sheet of each of the pulps in question, the sheet being ruled off into sections about 4 x 5 inches. The sections on each sheet were numbered consecutively and then the sheet was cut up. The sections numbered 1, 11, 21, etc., were sent to the first laboratory; those numbered 2, 12, 22, etc., to the second laboratory and so on. In this way it was hoped that the samples sent to each laboratory would represent an even distribution of the pitch throughout the sheet. Each collaborator was requested to determine the ether extract and alcohol extract on each sample in duplicate. Six of the nine collaborators have thus far submitted results. The figures submitted however do not show satisfactory agreement and indicate that incomplete extraction was obtained in many cases. Further work is being done on the method before presenting it for ratification by the Association.

NOTE.—A number of years ago E. Richter called attention to the fact that the pitch in sulphite pulp is completely soluble in alcohol and a portion of it is soluble in ether. He pointed out that by extracting sulphite pulp first with ether and subsequently with alcohol, the sum of the two extracts was the same as the total extract obtained by alcohol alone and he further expressed the opinion that it was the ether-soluble portion of the pitch that caused the most trouble in paper making. In such cases as the writer has been able to follow through we have found that unbleached sulphite pulp causing pitch troubles in making tissue paper showed an ether extract greater than 1 per cent. Such work as we have done on different solvents also seems to indicate that chloroform and carbon tetrachloride and possibly benzol give an amount of pitch in unbleached sulphite substantially the same as the pitch obtained by a complete alcohol extraction. As there seems to be some question as to whether it is the total pitch in the pulp or the ether soluble pitch which gives trouble it seems advisable to determine the ether-soluble pitch in addition to the total pitch, and the method above given has been used satisfactorily in this laboratory for about fifteen years.

* Presented at Annual Meeting of TAPPI, New York, Feb. 21, 1929.

[1] Member TAPPI; Director of Tests and Asst. Treas., Arthur D. Little, Inc., Cambridge, Mass.

[3] Specially denatured alcohol No. 30 may be used.

Sixty Years Operating Advancement in the Sulphite Industry *

By T. L. Dunbar[1]

A logical method of bringing out the advancement of any industry in a striking manner, is to compare it to the progress made by contemporary industrial developments. With the sulphite industry, however, such a comparison could scarcely be drawn, because if the automotive industry, radio, telegraphy, aerial transportation and other striking phases of this industrial age were used as standards, the progress of the industry considered here would fade to insignificance beside them. This is more apparent when we consider that these common accessories of modern life were practically unknown or unthought of, a score of years ago. If comparisons were set up with developments in metallurgy, telegraphy, electricity, steam, or numerous other branches of the industrial field which were born during the same generation as the sulphite pulping process, it would still remain as a back number in the book of progress.

Therefore, the slow tedious advancement of the sulphite mill must be outlined, not by the logical method of comparison, but by a description of the steps through which it has reached the present state. Time limits a complete historical review and brevity will, therefore, characterize this outline. However, it is vitally essential to point out that the progress made, not only technically, but also mechanically, in the sulphite pulp industry has not, by any means, kept pace with the universal march of progress characteristic of this age.

Let us begin by considering the birth of the industry and the problems which confronted the originator.

The Tilghman Patent

The first patent involving the use of sulphurous acid in reducing wood to pulp was that numbered 70,485, and issued Nov. 5th, 1867 to Benjamin C. Tilghman, then of Philadelphia, and a chemist to whom many branches of technology are much indebted. A supplementary patent, number 92,229, covering the treatment of fibrous materials at the ordinary pressure was issued to the same inventor in 1869. These patents form the basis of all the various modifications of the process in operation at the present time. The numerous subsequent patents to other inventors cover merely improvements in apparatus and details of treatment.

Tilghman states that this invention consists of a process of treating vegetable substances which contain fibers with a solution of sulphurous acid in water, heated in a closed vessel, under a pressure sufficient to retain acid gas until the intercellular incrusting or cementing matter existing between fibers is dissolved either partially or wholly, as may be desired, and a fibrous product is obtained, suitable for the manufacture of paper pulp of fibers, or for other uses, according to the nature of the material employed.

The following abstract of Tilghman's original patent will serve to indicate how carefully, and thoroughly, he had worked out this process in the experimental way, and how clearly he perceived all of its possibilities. His difficulties, which he later found too serious to overcome, were evidently confined almost entirely to the engineering side of the process. It will also indicate his vision and demonstrate how closely the problems which he encountered are associated with problems which have not been properly solved, even to this day.

The specifications call for a strong iron vessel of convenient size, and shape, lined with lead and provided with a steam jacket, and with the necessary pipes, cocks, and manholes for filling, and emptying the charge; and with gauges, safety valves and thermometers to indicate the height of liquid, pressure and temperature. This vessel is about two-thirds filled with chips, hemlock or poplar being specified. A solution of sulphurous acid in water, of specific gravity 1.025 to 1.035, in which a quantity of lime has been dissolved sufficiently to raise its density to about 1.07 to 1.08, is run in until the amount is enough to keep the wood constantly covered by liquid during treatment. The boiling is conducted for about eight hours up to a temperature of 260 deg. F., when fresh water is forced in at the top of the digester to wash out the acid solution. If the pulp, upon examination, proved, as was undoubtedly the case, to be imperfectly separated, it was to be again treated with a fresh charge of cooking liquor at a temperature of from 260 deg. to 280 deg. F., for three to five hours, as might be necessary. The patentee speaks of the quantity of sulphite lime deposited during the boiling, and points out that it may be re-used together with the sulphurous acid gas which may be driven off from waste liquor. He states that the stronger the acid solution, the more rapid is the action at a given temperature; also, the higher the temperature, the more rapid is the action with a given density of the solution. With weak acid and comparatively low temperature, he says, foreshadowing the Mitscherlich process, the effect can be produced by continuing the digester a sufficiently long time.

Claims of the Tilghman Patent

On account of their historical interest and important bearing on the process, there is given below in *full* the claims of Tilghman's first patent:

"The process of treating vegetable substances which contain fibers, with a solution of sulphurous acid in water, either with or without the addition of sulphates or other salts of equivalent chemical properties, as above explained, heated in a closed vessel, under pressure, to a temperature sufficient to cause it to dissolve the intercellular incrusting or cementing constituents of vegetable substances, so as to leave the undissolved product in a fibrous state, suitable for the manufacture of paper, paper pulp, cellulose, or fibers, or for other purposes, according to the nature of the material employed.

I also claim as new articles of manufacture the two products obtained by treating vegetable substances which contain fibers with a solution of sulphurous acid in water, either with or without the addition of sulphites, or other salts of equivalent chemical properties as above explained, heated in a closed vessel under pressure, to a temperature sufficient to cause it to dissolve the intercellular or incrusting constituents of said vegetable substances, one of said products being soluble in water and containing the elements of starchy, gummy and saline constituents of the plants, and the other product being insoluble fibrous material, applicable to the manufacture of paper cellulose or fibers, or to other purposes, according to the nature of the material employed.

I also claim the use and application, in the manufacture of paper pulp, cellulose, and fibrous materials, produced by treating vegetable substances, which contain fibers with a solution of sulphurous acid in water, either with or without the addition of sulphites, or other salts, or equivalent chemical properties, as above explained, heated in a closed vessel, under pressure, to a temperature sufficient to cause it to dissolve the incrusting or intercellular constituents of said vegetable substances.

I also claim the recovery, and re-use, of sulphurous acid and sulphite from acid liquors which have been digested on vegetable fibrous substances, by boiling said liquids or neutralizing them with hydrate of lime."

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* Presented at Annual Meeting of TAPPI, New York, Feb. 20, 1929.

[1] Member TAPPI; Manager, Canadian Stebbins Engineering and Mfg. Co., Montreal, P. Q.

From the foregoing it can readily be seen that the basic chemistry of the sulphite process has not materially changed since its inception.

Other Sulphite Pioneers

Tilghman encountered difficulties in placing his process on a commercial basis, which finally became too serious to overcome, and in 1870 Fry and Eckman continued the work, and finally started a small experimental mill in 1872, and a commercial plant at Bergvik, Sweden in 1874, which used the so called Eckman process. Following this step, Mitscherlich secured patents on the well known indirect cooking method, but these patents were contested in 1883 by Behrend and found invalid by German courts, but these findings, evidently, were not sustained by the United States courts, as it later developes that August Thilmany purchased the Mitscherlich patent and in 1887 transferred the rights for United States and Canada to the International Paper and Fibre Company, which erected the first mill in America using this process, at Alpena, Michigan.

This period brought out many new ideas and processes relating to the production of sulphite. The names of Francke, Parkington, Graham, Cross, Flodquist, Ritter and Kellner are contemporary and all contributed to the development of the industry, but only the process brought out by Ritter and Kellner has withstood the test of time. It is used today with but slight modifications in practically all of the mills on this continent.

The beginning of the twentieth century found the sulphite industry in a fairly advanced state, considering the age of the process, and the attendant circumstances, but from that time on progress slackened, and for many years it has fallen far behind the other branches of the paper industry in advancement. While the mechanical pulp mill has emerged from its former inefficient and generally unkept condition, to its nearly automatic and highly efficient condition of today, paper machines have been marvelously improved and other departments of the mill have undergone an almost complete metamorphosis, the sulphite plant has been only lightly touched by the march of progress. Mills built thirty years ago, and practically unimproved today, are, in the opinion of many operators, by no means obsolete. In fact, some plants constructed during the last two years do not differ materially in equipment or operating methods from those put into service over a quarter of a century ago. In general, digesters have been made larger, piping more neatly and conveniently placed, better instruments installed and some effort at scientific operation made, but it is safe to state that since the development of the Ritter-Kellner process no revolutionary or radical improvement in operation has been given to the sulphite industry, as a whole, nor has it, as a unit, enjoyed a really great improvement in apparatus, since the replacement of lead linings in the digesters, with those of refractory brick.

The sulphite industry is taken as a whole, because it is certain that some radical improvements in means and methods have been made by certain mills, and some wonderful things accomplished thereby. These improvements have, however, been zealously guarded and the possible benefit derived from them has not been enjoyed by the industry at large.

In remaining so dormant and not keeping pace with the ever increasing call for efficiency, which has been so ably answered by the other branches of the paper industry, the sulphite mill has become the greatest waster in industrial history. It throws away more than half of the raw products put into the process and dissipates about 70 per cent of the heat used, nearly all of which can be recovered. Chemists tell us that the average sulphite mill rejects to the sewer products, which are more valuable than the pulp produced. This flagrant waste, due solely to the lack of development which will permit the economical production of by products and the proper operation of this process, has made the sulphite mill the target for manifold criticisms everywhere, and has labeled it a public nuisance in some localities, but the industry has responded slowly to the imperative need for advancement.

The most critical period which the paper industry has faced in many years is at hand, and it is now time to look forward to the vast potential possibilities which the immediate future holds, and to consider in some detail a few radical improvements in equipment and methods which have recently been placed at the service of the industry.

Filling the Digester

One of the primary sources of waste in the sulphite mill is the failure to properly utilize the space in the digesters. The ordinary method of charging permits the chips to fall loosely into the digester, without any attempt at distribution, with the result that a production of from 3½ to 4½ pounds of pulp, per cubic foot of space is obtained, varying with the character of the wood and the cooking method. If the chips were properly distributed in the digester, the production could be increased from ½ to ¾ pounds per cubic foot, and it is not necessary to elaborate on the value of such an increase to the average mill. Many schemes have been tried to accomplish this purpose, and methods varying from the blowing of the chips with air to ramming with a plunger have been tried. At the present time, the economical packing of chips is an accomplished fact. The most successful work along this line is now being done with distributing devices which spread the falling column of chips over the entire digester area, and throw the chip in such a way as to cause it to flutter downwards and generally fall flat. It is possible to consistently place from 16 to 20 per cent more chips in a digester, with the best type of fillers, than can be placed by ordinary filling methods. An exceptional case reports a 28 per cent increase without encountering any difficulty in circulating the cooking liquor. In general, merit is claimed for chip fillers only on the basis of increased production, but the fact that the more even distribution of chips, which is secured, is helpful in obtaining a more uniform treatment of the whole pulp mass during the cooking process, with a resulting improvement in the quality of fiber produced, brings additional benefits worthy of consideration.

Circulation of Cooking Liquor

With the advantage of chip packing in mind, it is logical to turn to the circulation of the cooking liquor, which represents another long stride in the progress of the sulphite industry. This assembly is fortunate in having presented before it a paper detailing the development and the accomplishments of a system for the positive circulation of cooking liquor, which has been developed on this continent. Many obstacles, which a few years ago were considered unsurmountable, have been successfully overcome in giving this boon to the industry. It is unnecessary to say more regarding it here, except that the sulphite mill of the future will not have to face the losses arising from uneven distribution of heat in digesters and lack of uniform chemical action on the mass of chips, and in so doing, will increase production as well as yield and strength, and secure for itself the manifold advantages associated with the tangible improvements.

Having touched upon two creditable strides towards the goal of perfection, which have only recently been proven, let us consider a third; that of hot liquor and gas recovery.

Hot Liquor and Gas Recovery

Until recently it has been customary in all sulphite cooking processes to recover the relief liquor and gases by first cooling them. For many years operators have sought a more efficient means of effecting this recovery in a manner which would avoid the dissipation of heat energy by cooling. This has finally been accomplished by interposing one or more pressure vessels, known as acid accumulators, between the acid storage tanks and the digesters, and by contacting the hot relief gases and liquor with the cold, fresh acid supply in these vessels. By proper manipulation it is possible to go much farther than the recovery of the relief liquor and gases ordinarily vented, and to reduce the pressure in the digesters to practically atmospheric before dumping, thus effecting the recovery of much heat and gas generally lost

in blowing. This heat is subsequently returned to the digesters which are filled with hot, strong acid from the accumulator. The mechanics of this method are comparatively simple, calling merely for an intelligent manipulation of the proper volume of cold acid to condense the steam and gases within the limits of predetermined pressure.

Some concrete data might not be amiss in demonstrating the direct savings possible by this method of recovery. In one plant, cooking hemlock wood, which gives a comparatively low yield, a saving per ton of pulp produced, of 1500 pounds of steam, carrying approximately 1300 B.T.U. per pound, has been accomplished by the use of this method, but continuing to blow the digesters at 50 pounds end point pressure. A reduction from 324 pounds per ton to 256 pounds per ton, or a saving of 68 pounds of sulphur per ton was also demonstrated during a period when several other mills in the vicinity, cooking the same grade of hemlock, by ordinary methods, showed a sulphur consumption—consistently near 300 pounds per ton of pulp produced. In other plants similar results are also noted. This saving which indicates better and more complete gas recovery goes hand in hand with the production of a stronger and more uniform cooking acid. To explain this in theory it is only necessary to recall one of the fundamental physical laws governing the action of gases; that of Henry, and consider that since the accumulator is under pressure, it supplies an ideal working demonstration of this law.

The hot acid supplied from the accumulator to the digesters is a source of many advantages other than the saving of heat and gas accomplished in its preparation. Sulphite chemists have demonstrated that the penetration of chips by hot acid is far more rapid than by cold and in cooking with the process now being described, it is probable that. the ratio is 3 to 1, since the viscosity of the acid is roughly three times as great at 25 deg. C., as it is at 85 deg. C., the ordinary temperature of the accumulator acid.

This whole subject of hot acid and its far reaching effects is too vast to be considered here, but intensive scientific research and carefully planned practical investigations of this subject are now in progress, and this body will, at a later date, be given the full results of the investigations. For the present the practical demonstrations which have proven that pumping digesters with hot acid does reduce the cooking cycle, increase the yield and improve the quality of the pulp, will have to serve as a testimonial of its worth.

Stepping Stones to Development

Sixty years of plodding progress are behind and the knowledge which these years have given can bear fruit in furnishing a stepping stone to the great future developments towards which the industry is now reaching. Private individuals, corporations, trade schools, universities and government laboratories have the problems of the industry under consideration. The latest addition to the array of forces concentrating on this objective is the super pulp and paper laboratory which is connected with McGill University, and which has been erected there through the cooperation of the Canadian government, and the pulp and paper industry of the Dominion. Universities in the United States are also co-operating with the industry. From the new unit great results may be expected in the future. The industry is coming to life and it is now possible to visualize a super-sulphite mill of the near future, which will outstrip all other branches of the paper industry in scientific control and operation, a plant which will return pound for pound and heat unit for heat unit the products fed to it, a plant free from obnoxious odors and life destroying effluent, which will fulfill the prophecy conceived by one of the greatest intellects the world has ever known—"That the sulphite mill of the future will be the nucleous of numerous industries, powerful and important, second only to the vast industry of the coal tar product."

Report on Abstracts and Bibliography

By Clarence J. West, Chairman

Publications

During the year 1928, the following contributions from the committee appeared in the columns of the Technical Section of the PAPER TRADE JOURNAL.

ABSTRACTS: During the past year there appeared 66 pages of abstracts, as compared with 65 pages for 1927, 107 pages for 1926, 77 for 1925 and 78 for 1924.

BIBLIOGRAPHIES: The annual bibliography for 1927 appeared in the Convention Number of the PAPER TRADE JOURNAL (Feb. 23, 1928) and also in the Technical Association Papers (XI, no. 1:146-168); for the first time an author index to the bibliography was prepared and published. The usual supplement, covering the activities of the Paper Section of the Bureau of Standards, appeared in the PAPER TRADE JOURNAL for April 26, 1928.

INDEXES: The semi-annual indexes of the Technical Section (volumes 85 and 86, 7 pages); the index for volume 87 has also been prepared.

PATENTS: Technical Association Papers XI, no. 1:280-284 gives a summary of U. S. patents on paper making issued during 1927, arranged according to the classification used by the Patent Office. A chronological list of the patents for 1928 was published quarterly in the Technical Section; a classified list will appear in the twelfth series of the Association Papers (about 5 pages).

Paper Making Materials

The revision of the bibliography on Paper Making Materials was published by the Lockwood Trade Journal Company as a cloth bound book of 238 pages. This is a dictionary arrangement of many woods and of nearly all the known substitutes for wood and is a companion volume (or supplement) to the Bibliography of Pulp and Paper Making.

Bibliography of Pulp and Paper Making

After a year of very strenuous work, which was made possible through the cooperation of the National Research Council, the Committee is privileged to present to the Association the "Bibliography of Pulp and Paper Making", a 980 page book, manufactured by the Lockwood Trade Journal Company. This bibliography covers, in so far as material was available, the books and periodical literature from 1900 through the greater part of 1928. This material is arranged under 154 major heads, many of which are subdivided; all the headings are arranged in the form of an index, which it is hoped, will make the various topics readily available. The bibliography contains approximately 18,000 individual citations. The thanks of the Committee are extended to the National Research Council, for allowing the chairman, who is director of the Research Information Service of the Council, to devote much of his time to this work, to Miss Ervye L. Risher and Miss Callie Hull, for their assistance in the work of compilation, proofreading, etc., and to the Lockwood Trade Journal Company for the important contribution which it has made in assuming the financial burden involved in its manufacture and distribution. It is the hope of the committee that this work may prove of value to the industry.

Requests

The chairman has had the usual number of requests for abstracted articles and has done his best to supply the desired information. The books indicated in this report are obtainable from the Technical Association of the Pulp and Paper Industry, 18 East 41st street, New York, N. Y.

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Edited by
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Effect of Mergers on Manufacturers' Problems*

By James O. McKinsey, James O. McKinsey & Co., Chicago.

The subject of mergers and their effects is a very difficult one to discuss for several reasons. There is practically no information on this subject in the literature of business management. Although mergers have taken place in the United States for many years, it is only within the past few years that they have been numerous and many of these have taken place so recently that we cannot know from experience what results they have produced.

It is very difficult to make generalizations with reference to this subject because of the variety of conditions which exist in practically every merger. The more you study this problem the more you become convinced that each merger is a distinct and separate problem and that one must think in terms of concrete cases if he is to arrive at sound conclusions. Under these conditions, the most I can hope to do is to raise certain issues which I trust will be of sufficient interest to challenge thinking on this important subject.

To simplify the problem to some extent, I have tried to classify mergers into certain broad groups. The classification I suggest is not an inclusive one but it will at least serve to indicate the desirability of thinking of mergers in terms of types rather than in general terms.

Two Broad Classifications

Mergers may be divided into two broad classifications; namely, horizontal mergers and vertical mergers.

A horizontal merger is one that results from the consolidation of two or more companies which are engaged in the same type of activities. The merger of two companies engaged in the manufacturing and selling of the same or similar types of products or at least selling products to the same type of trade would be an example of a horizontal merger. For example, the consolidation of two companies manufacturing and selling automobiles would be an illustration of such a type.

A vertical merger is a combination of two or more companies performing different kinds of activities from the point of view of the manufacturing and selling processes. A merger of a mining company producing lead with a company manufacturing and selling paint would be an illustration of this type of merger.

I shall confine my remarks primarily to a discussion of the first type of merger, although some attention will be given to the second type later in this discussion.

Three Classes of Horizontal Mergers

Horizontal mergers may again be divided roughly into three classifications:

1—Those resulting from the combination of two or more companies producing and selling the same or similar types of products which are unbranded and which consequently do not have a distinct entity.

2—Those resulting from the combination of two or more companies which produce and sell competing products which are branded or have a distinct entity.

3—Those resulting from the combination of two or more companies selling branded products which are supplementary to each other rather than competitive to each other.

An Illustration of the First Type

An illustration of the first type would be the combination of two or more banks. These banks as separate units have sold the same or similar services which have no brand identity. One of the principal problems from the sales point of view in such a combination is to convince the public that the merged organization will be able to render better service than did the separate organizations.

We recently had a merger of two large banks in Chicago. I have been interested in reading the advertising of these two organizations, since the merger was announced, in which they have presented arguments to the public stating why the new organization can render better service than did the separate organizations. It is undoubtedly true that because of the increased capitalization and the increased size of the various departments in the new organization it will be able to serve some customers, especially the large customers, to better advantage than did the separate units.

On the other hand, there is considerable question whether the new organization can maintain the same personal contact with customers which was maintained by the separate organizations and whether some of the smaller customers of each institution may not think that their interests may be better served if they are affiliated with a small bank.

Under such circumstances the policy is usually adopted of having the officers in each bank who formerly dealt with customers continue to deal with these customers after the merger has taken place. This is an advantage from the point of view of maintaining customer good-will, but may result in a heavy overhead cost in maintaining a large number of executives. Because of such necessities, often the anticipated savings from consolidations do not result for some time after the consolidations take place.

There is also the possibility that the merged organization may not be able to provide as varied and flexible service to customers as was provided by the separate units. As an organization be-

* Manufacturing News.

comes larger it is necessary for its policies to become more definite and its methods and procedures to become standardized and routine. It becomes more difficult to make exceptions to meet individual needs of customers.

Instances of Rapid Growth

A number of illustrations of this condition could be given if time and space permitted. One example will probably serve to illustrate what I have in mind. I can think of a small publishing company which grew from a very modest beginning to a very considerable size in a short period of time, due largely to the fact that it was able to offer specialized service to its customers. The control was vested in the president and he granted authority to give special service to customers when he thought it was necessary to secure their business. In later years this company was combined with other companies in the publishing business and produced and sold a variety of text books.

Because of this increase in size, it became impossible for it to make as many exceptions to its general policy as it had made formerly. For example, it was necessary for it to have a rather rigid production program and it was found to be inexpedient to vary this program in order to prepare special material for a customer who wanted something distinctive from its standard stock. As a result this company lost a large number of the customers which it formerly served. It is true that because of its increase in size it was able to obtain many new customers but there was a very considerable change in its customers in a period of a few years.

This condition is likely to exist in any case where a small company becomes a part of a large organization, which must of necessity become more standardized if it is to be efficient.

Another problem which may arise, in the case of a merger of this type is the difficulty of persuading customers to change from one place of business to another if by the consolidation it is necessary to concentrate the activities of the various merged companies. It is a well known fact that many people become accustomed to doing business at a certain location and if they are required to go elsewhere as a result of a merger they may seek a new connection. The importance of this problem depends, of course, upon the nature of the product and service rendered by the company and whether it is necessary for the customer to come to the place of business or whether he is served by the representatives of the company.

An Illustration of the Second Type

An illustration of the second type of horizontal merger would be the consolidation of two packing companies with branded products which had been advertised and sold under a distinctive brand. In a case of this kind a number of interesting problems arise. The first question is whether the new organization should continue to sell the branded products of both companies or should concentrate on one brand. Experience has shown that if one or more brands are discontinued, it is not possible to transfer all of the previous customers for the discontinued brands to the brand continued. Usually during the period of transition competitors will succeed in securing some of the former customers of the discontinued brand. The new company must decide, therefore, whether the advantages of selling one brand compensates them for the loss of customers which inevitably results from the discontinuing of one or more brands.

If it is decided to continue to sell the brands of both companies, it is then necessary to decide whether they should be sold by one sales organization or by separate sales organizations. If the brands have previously been competitive it is usually somewhat difficult to secure effective selling of both brands by the same sales organization. It is difficult for the salesman of one brand to become equally enthusiastic about the other brand. One method of overcoming this objection is to maintain separate sales organizations and even, in some cases, to maintain a separate administrative organization for each company. This method is being followed effectively in some of the automobile companies where products are being sold which appeal to different types of people and which are sold at different prices.

It is somewhat more difficult to follow this plan if the products of both of the merged organizations are produced at the same cost and are supposed to be sold at the same prices. In this case if separate sales organizations are maintained very often an undesirable competitive situation arises.

There are a number of questions with reference to this problem which have not been satisfactorily answered and which I think cannot be answered without more experience than we now have. I do not mean to imply that it is not possible to solve this problem or that it is so difficult that such a merger should not take place but I am simply pointing out the difficulties which may arise from such a merger.

An Illustration of the Third Type

An illustration of the third type of horizontal merger which we mentioned would be the union of two or more companies selling office appliances such as typewriters, adding machines, addressing equipment and filing equipment. These products are supplementary to each other rather than competitive to each other. The principal sales problem which arises in this case is whether the same salesmen should sell all of these products or whether there should be a separate sales organization for each product.

There has been a tendency in the past to believe that sales expenses can be reduced by increasing the number of products which a salesman sells. My experience leads me to believe that although this may be possible, serious consideration should be given to the possible decrease in efficiency resulting from this plan. Very often it is found that salesmen who have been quite efficient in selling specialties are far from being as efficient when asked to sell a number of different products. I could give numerous examples to illustrate this problem but time does not permit.

Selling One Line or Many

All who have had experience in the sales field know the importance of this problem. I think it is necessary for us to give serious consideration to the question of how far we can go in increasing the number of products which the salesman offers to the customer and still maintain a sales force which can compete with the salesman of a company which is selling only one line. It is not difficult to find a small organization, selling only one product through the use of high-grade specialty salesmen, which is making more profits than other companies which are selling several products and securing a much greater volume of sales but a much smaller gross margin. As a consequence, I have some doubts concerning the results which will be obtained from some of the mergers which have taken place in recent years of companies selling different lines of product.

I have only touched a few of the high spots with reference to the sales problems which arise from horizontal mergers. I now pass to a very brief consideration of the production problems which arise as the result of such mergers.

Nature of the Production Problems

The nature of the production problems which result from these mergers depends to a very large degree upon the peculiar conditions which exist in each case. The simplest case is the one which arises from the consolidation of two companies producing the same product where the production activities can be concentrated in fewer production units than were used by the separate companies. By this means it is often possible to reduce materially the overhead expense and this is one of the most important arguments for the merger of such companies.

We are all aware that in most lines of industry there has been an excess of production capacity during recent years. Many companies constructed plant facilities during the war period which were far in excess of their needs after the conclusion of the boom years during and immediately after the war. Some benefits have been obtained by combining the production activities of the merged

companies into fewer units and making other use of the production units needed by the company in the manufacture of its product. This result can be obtained, of course, only when the unused plants can be disposed of, used for other purposes, or greater savings can be made from the concentration of production activities than the loss resulting from the carrying charges of the unused plants.

Of course, combinations of this kind sometimes produce another result; namely, the restriction of production output and consequently the reduction of competition in the sales field. This plan was resorted to in the pre-Volstead days by some of the distilling companies. By merging the producing companies and restricting output it was possible in some cases to increase prices. The bootlegging of the present day seems to have a more effective method than this; namely, the killing off of competitors.

Sometimes the situation exists where companies are merged which have production facilities located in different sales territories and by combination it is possible for the new company to produce goods nearer the place of sales and consequently reduce distribution costs.

These are but a few of the production problems which may arise and benefits which may result from mergers of this type.

In the case of vertical mergers, the primary purpose is either to secure control of raw material or piece parts or to obtain control of sales outlets.

Most mergers of this type have been made for the first purpose; namely, to secure control of sources of supply. It is usually contended that such mergers will enable the original company to secure the product which it formerly bought at a better price by eliminating the profit of the producing company. Of course, this may be true in many cases; but I suggest that here again careful consideration should be given to certain reasons why such results may not be secured.

We all know that many large companies are able to secure their requirements by buying from a number of small companies at prices which are less than the total cost of the product to the producing companies. If the producing companies have unused capacity, they may sell a certain part of their product in large quantities to large customers at prices somewhat less than the total cost of production so long as they secure from such sale part of the overhead which would otherwise have to be borne by the remainder of their product which is sold to smaller customers. The consuming company which secures control of such units and attempts to operate them entirely for its own product may find that the cost is larger than the former purchase price.

A Question of Production

Just now some of the chain store organizations are purchasing units to produce some of the product which they have previously bought. I would not be surprised if some of them find that they do not secure by this means the savings which they anticipate. We all know that many manufacturing companies have sold part of their product to chain stores at very low prices, in fact, at prices at which they could not possibly sell all of the production of their plants.

There are, of course, some compensating benefits in controlling the sources of supply, since it enables the selling organization to control the quality of merchandise and also assures a constant supply.

It would be possible to discuss this phase of this problem for any length of time and much could be said with reference to the problems arising from securing control of sales outlets by mergers, but I shall pass on in order to be able to discuss briefly the effect of mergers on the administrative problems of a business which, from my point of view, form the most important phase of this problem.

The first effect of a merger from an administrative point of view is an over-supply of executives. Usually when two or more companies are merged it is found that there is a surplus of executives of major rank. Sometimes, of course, this produces a desirable situation since it enables the management to dispose of some of the executives who are not so efficient and to retain those who are considered most desirable. In other cases, it is somewhat difficult to determine which executives should be eliminated from the organization without affecting the efficiency and morale of the new company. A friend of mine who has traveled extensively over the United States in the last few years remarked the other day that the method usually followed in such cases was to discharge the executives receiving the largest salary and retain those receiving the smallest salaries. This may be an easy solution of this problem but does not necessarily produce a satisfactory result. Of course, in some cases, one of the primary benefits of a merger is the securing of capable management which may have been lacking in part in the separate companies.

Another important administrative problem which arises as a result of a merger is the securing of executives who are capable of handling the administrative problems of the merged units. It is a well known fact that executives can only be developed gradually. We all know that it is the exceptional man who can be as efficient in handling a large business as he is in handling a small business if his transition from one position to the other is made instantaneously.

The Problem of Executives

For example, a man may be a very efficient president of a company making sales of $5,000,000 a year but may be quite inefficient as a president of a company making sales of $25,000,000 a year if he is transferred from one position to another as a result of a merger of several companies. The same is true of any other executive, such as sales manager, production manager, etc. I emphasize this problem because I have found from experience that many of those who are interested in promoting mergers fail to give sufficient consideration to this problem. From my point of view it is one of the most significant problems which must be met in the case of a typical merger.

Another important problem which arises in mergers is the development of a proper esprit de corps among the employees of the new organization. When two or more competing companies are merged there is sometimes a feeling of jealousy and rivalry between the employees which does not promote the greatest efficiency in the new organization. Each group of employees is inclined to be loyal to its former company and to doubt the efficiency of the employees of the other companies. It usually takes a considerable period of time and the exerting of a considerable amount of diplomacy on the part of the management to develop the same spirit of loyalty in the new organization as existed among the employees of the separate organizations.

Another Administrative Problem

Another administrative problem which often arises in the case of such mergers is the maintaining of the same spirit of aggressiveness and initiative on the part of the executives in the new organization which existed in the separate units. In many cases an executive who has held a major position in one of the original companies finds himself holding a position which he considers of less importance in the new organization. For example, in the separate company he may have been a major executive reporting directly to the chief executive while in the new organization he finds two or three executives intervening between himself and the major executive. Because of this condition, he may be inclined to become what one executive describes as a "bureaucrat"; namely, be affected with reference to both buying and selling problems a means by which reports are passed up to superiors and orders are passed down to subordinates.

There are many other administrative problems which result from mergers which I might discuss, but to give consideration to these would carry us too far afield.

I have not dealt at all in this discussion with one phase of this problem; namely, the effect of mergers upon the business organizations dealing with the companies merged. Each party may be affected with reference to both buying and selling problems

by the merger of companies with which they are now dealing. Especially in the sales field the tendency towards mergers and consequently the developing of larger purchasing units is creating some very important sales problems. All companies who sell their products in the field where chain stores have developed in the past few years can recognize the significance of this problem. I know of many cases where companies have lost a very substantial amount of their sales volume because companies to whom they formerly sold have merged with companies which had other sales connections.

All Problems Not Solved by Mergers

As a result of this tendency towards the concentration of buying power it is necessary to give serious consideration to our methods of distributing and the type of sales organization we need. It would be possible to spend an amount of time greater than I have occupied in this discussion in considering this problem alone, but it has seemed to me that it was not desirable to attempt to deal with both phases of this problem at one time.

Let me emphasize that I do not wish to convey the impression that I do not believe much benefit may be gained from mergers or that mergers are not beneficial in many cases. I think there is no doubt that we will continue to have many mergers in the future. I do wish, however, to express the thought that we should not consider mergers as a solution to our problems in all cases. Many mergers have taken place during the last few years because of the desire on the part of promoters and investment bankers to secure profits as a result of these mergers. I do not in any way criticize these gentlemen for seeking to make legitimate profits from this source but I do believe that those of us who are interested in companies which it is proposed to merge into larger units should give serious consideration to all of the problems which may result from such a consolidation.

It may seem that I have discussed the difficulties arising from such mergers rather than the advantages which may result but it is only because I am sure that the advantages have already been told many times by those who are promoting these mergers and that I think I can serve a more useful purpose by emphasizing some of the difficulties. Mergers, of course, may result in decreasing competition, reducing overhead, and promoting efficiency through specialization, but we should not assume that they will result naturally from a merger until we have given careful thought to each concrete case.

There is one important benefit which may result from mergers to which I think far too little attention has been given and that is the possibility of the new organization's being able economically to provide adequate staff services. For example, the larger organization may be able to provide economically for adequate research work and the results of this work may give it a distinct advantage over smaller competitors. The extent to which this has been done in such companies as the General Motors Corporation and the American Telephone and Telegraph Company is known to all. There is little doubt that the separate units of these corporations have already benefited by the work in this field of the parent company.

Many other specialized and technical services can be provided by larger units which would not be practicable for smaller units to maintain. More and more, success in business is the result of knowledge rather than unusual situations or individual shrewdness. Of course, excessive overhead can be created by carrying such work to an extreme but I am inclined to believe the "point of diminishing returns" is not reached in this field as quickly as it is in the routine activities of business.

Some Difficulties of Mergers

I believe that benefit will result from pointing out some of the difficulties which will arise from mergers if for no other reason than that it will prevent us from becoming too enthusiastic about the possibilities of mergers and as a consequence help to promote so many of these that a reaction will take place. The history of industry in the United States clearly shows that we are very much inclined to go to extremes when any particular plan of organization or method of management becomes popular. We can all remember the days when so called scientific management was promoted by its ardent exponents. As a result of this propaganda many companies installed more complex methods of management than were necessary for their use and in later years there was an undesirable reaction against scientific methods which it took many years to overcome. In the same way, we had the period when the cost accountant reigned supreme and later on when the efficiency expert was thought to be the solution of all of our business problems.

It is well for us to realize that business administration must deal with numerous and complex problems for which there is no one standard solution. There are certain general principles which have wide application but these must be applied with judgment to each concrete case. After all, judgment of capable and experienced executives based on adequate information is the only method of solving business problems. I suggest, therefore, in conclusion that each of those who may be at any time considering the possibility of a merger, attempt to analyze the various problems which may result, in a careful way gather all the facts possible and then exercise their judgment concerning the benefits of the merger instead of depending upon the forecasts of those who may be entirely sincere and yet biased in their opinions.

Prize for Forestry Problem

A friend of forestry, who wishes to remain anonymous, has given the Society of American Foresters, Lenox Building, Washington, D. C., $1,250 to be awarded as prizes of $1,000 and $250 for the best essays describing the present forestry situation in the United States and proposing a nation-wide remedy for its solution. The purpose of the donor is to stimulate the study of the national problem of forestry and to bring out constructive suggestions for meeting it in an effective way.

1. Essays submitted in the contest shall cover: *first*, the actual forestry situation in the United States today; *second*, a nation-wide remedy which (a) will, if applied, solve the problem of a permanent and sufficient supply of forest products and secure other benefits of forests essential to the public welfare; (b) will be applicable in actual practice; and (c) can be applied in time to meet the nation's needs. The essays must be based not on hypothetical assumptions but on the actual situation in the United States today.

2. The essays must be typed and must not exceed 3,000 words, exclusive of a summary of conclusions which should be presented at the beginning of the paper.

3. The contest is open to any individual who desires to compete.

4. Essays should not be signed by the author's real name but by a pseudonym. This pseudonym should be placed on the outside of an envelope containing the author's real name and transmitted with the essay.

5. The winning essays shall be published in the Journal of Forestry. The Committee of Award shall have the right to select from the other essays those which it deems worthy of publication and they will be published also in the Journal of Forestry. The remainder of the essays will be returned to the authors if they request their return and provide postage.

6. The Committee of Award reserves the right to withhold the prize providing no essays which are in its judgment worthy of the award are received.

7. All essays submitted in the contest should be forwarded to either of the two members of the Committee of Award, namely, S. T. Dana, School of Forestry and Conservation, University of Michigan, Ann Arbor, Mich., and Raphael Zon, Lake States Forest Experiment Station, University Farm, St. Paul, Minn., in time to reach them not later than September 30. The awards will be announced at the annual meeting of the Society of American Foresters in December, 1929.

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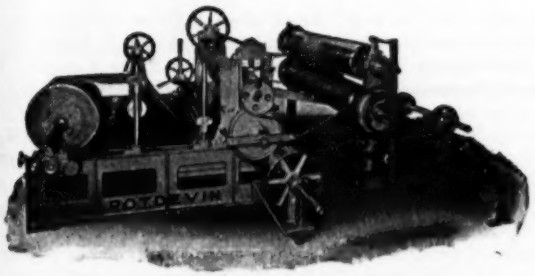

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Philadelphia Paper Mfg. Co., Phila., three orders total	2400 H.P.
Jessup & Moore Paper Co., Phila., four orders, total	4750 H.P.
Ontario Paper Co., Ltd. For Daily Newspaper Co., North Tonawanda, N. Y.	2034 H.P.
Filer Fibre Company, Filer City, Mich.	1500 H.P.
John Lang Paper Co., Philadelphia, Pa.	416 H.P.
Bayless Manufacturing Corp., Austin, Pa.	1300 H.P.
Northern Board & Paper Co., San Francisco, Cal., two orders, total	400 H.P.
Crown Williamette Paper Co., San Francisco, Cal., two orders, total	750 H.P.
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CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Taylorville, Ill.—The Hopper Paper Company is reported planning the construction of a new paper and pulp mill in the vicinity of its present plant, utilizing cornstalks as raw material for pulp supply. The project will consist of several units and is reported to cost more than $1,500,000, with machinery. Early erection is planned, dependent upon the cooperation of farmers and other interests in furnishing required supply of cornstalks. The proposed mill is the result of a series of experiments conducted by the company for the manufacture of high grade bond papers from pulp material of the character noted; the outcome has been entirely successful. These experiments have been carried out under the recently perfected process of the Cornstalks Products Company, Danville, Ill., and the proposed new mill will operate under this same process, which consists of a combination of 70 per cent cornstalks and 30 per cent wood pulp. The new mill will have a rated output of about 100 tons of paper a day, and it is understood that a site will be selected at Taylorville. F. H. Masselink is vice-president.

South Bend, Wash.—The Willapa Pulp and Paper Mills, Portland, Ore., will soon begin super-structure for the new buildings at its plant at South Bend, aggregating 450 x 600 feet, reported to cost more than $450,000, with equipment. A contract has been awarded to Butz Brothers, Menlo, Wash., for the furnishing of 1,500 piles on which the new units are to be located. The structures will provide for large increase in present output and will be pushed to completion. L. A. DeGuerre, Wisconsin Rapids, Wis., is engineer. R. A. Swain is president and general manager.

Lock Haven, Pa.—The New York & Pennsylvania Company, 200 Fifth avenue, New York, is having plans drawn for a new addition to its mill at Lock Haven, to be used primarily for storage and distributing service. Size and details will be determined at an early date. It is reported to cost more than $40,000.

Green Bay, Wis.—The Fort Howard Paper Company, South State street, has begun the construction of proposed new turbine room addition to mill, previously referred to in these columns, to be two-story, 30 x 50 feet, reported to cost close to $40,000, with equipment. General contract has been let to the Selmar Company, McCartney Bank Building, Green Bay. W. L. Fergus & Company, 343 South Dearborn street, Chicago, are architects and engineers.

Los Angeles, Cal.—The Schumacher Wall Board Corporation, 5721 South San Pedro street, has filed plans for construction of new one-story addition to plant, 20 x 50 feet, with extension 15 x 45 feet. Work will be placed under way at once. Leland S. Rosener, 233 Sansome street, San Francisco, Cal., is engineer.

Big Stone Gap, Va.—The Mead Fibre Company, Dayton, Ohio, is reported negotiating with the Chamber of Commerce at Big Stone Gap, for suitable site for a projected paper mill in this vicinity.

Philadelphia, Pa.—The Premier Case Opener, Inc., recently organized by Joseph J. Trainer, 820 South Second street, and associates, plans operation of local plant for the manufacture of patented openers for paper boxes, cartons, etc., designed as integral part of paper box unit in manufacture. Mr. Trainer will be treasurer of the new organization. Others interested include Francis H. and Raymond E. Trainer, and Frank E. Huhn.

Indianapolis, Ind.—The Central Ohio Paper Company, 1365 East 12th street, Cleveland, Ohio, wrapping papers and other commercial paper stocks, has secured a building under lease, at Indianapolis, and will establish a new branch storage and distributing plant in that city. Operations will begin at an early date. Sidney W. Lloyd will be in charge of fine paper department, and A. E. Hoover, in charge of coarse paper department, at the new branch.

Milwaukee, Wis.—The American Lace Paper Company, 908 Juneau avenue, has asked bids on general contract for its proposed new plant addition on the Port Washington Road, and will proceed with work at an early date. It will be four-story, brick and concrete, 82 x 320 feet, reported to cost in excess of $150,000, with equipment. Richard Philipp, 405 Broadway, Milwaukee, is architect.

Van Wert, Ohio—The Container Company, manufacturer of paper containers, cartons, etc., plans the early rebuilding of the portion of its local mill, destroyed by fire, February 18, with loss reported at close to $100,000, including building, equipment and stock. The company recently removed its plant to Van Wert from Toledo, Ohio.

West Point, Va.—The Albemarle-Chesapeake Corporation, West Point, is awarding various contracts for its proposed new mill addition, previously referred to in these columns, to be one-story, 77 x 578 feet, reported to cost more than $500,000, with equipment, including power plant and other features of expansion program. Foundations are under way. General contract has been let to John T. Wilson, Inc., Mutual Building, Richmond, Va.; contract for reinforcing steel, and steel sash has been given to the Truscon Steel Company, Youngstown, Ohio; and an award for glass and glazing, to the Sash, Door & Glass Corporation, Sixth street, Richmond. It is understood that a subcontract for structural steel framing will soon be let. The project will include a one-story addition to present power plant, 65 x 77 feet. The primary machinery to be installed will be furnished by Pusey & Jones, Wilmington, Del. The engineering department of the Albemarle-Chesapeake Corporation is in charge of the project.

Ottawa, Ont.—The Gatineau Power Company, a subsidiary of the International Paper & Power Corporation, Corner Brook, N. F., has begun the installation of additional generating equipment at its hydroelectric power plants at Farmers and Chelsea, on the Gatineau River, vicinity of Ottawa. The installation will provide for an increase of 58,000 hp., making a total capacity for the two stations of 232,000 hp. A large part of the power increase will be used for paper mill operation of the parent organization.

New Companies, Etc.

Kalamazoo, Mich.—The Kalamazoo Vegetable Parchment Company has arranged for an increase in capital from $3,000,000 to $5,000,000, a portion of proceeds to be used for general expansion.

Brooklyn, N. Y.—The Varet Paper Box Company, has been incorporated with a capital of $10,000, to manufacture paper boxes and containers. The company will be represented by H. V. Purvis, 186 Remsen street, Brooklyn.

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NEW YORK IMPORTS

WEEK ENDING FEBRUARY 23, 1929

SUMMARY

Cigarette paper .....1,154 cs.
Wall paper .....202 bls., 11 cs.
Paper hangings .....23 bls., 28 cs.
Painted paper .....3 cs.
News print .....159 rolls
Printing paper .....258 bls., 77 cs.
Colored paper .....35 cs.
Parchment paper .....6 cs.
Silk paper .....1 cs.
Wrapping paper .....2 cs.
Decalcomania paper .....72 cs.
Tissue paper .....60 cs.
Baryta coated paper.....352 cs.
Gold coated paper .....1 cs.
Surface coated paper .....5 cs.
Metal paper .....30 cs.
Photo paper .....3 cs.
Filter paper .....213 bls., 48 cs.
Drawing paper .....1 cs.
Writing paper .....22 cs.
Stencil paper and ink.....88 cs.
Miscellaneous paper....518 rolls, 101 bls., 168 cs.

CIGARETTE PAPER

P. J. Schweitzer, Pres. Wilson, Marseilles, 116 cs.
Standard Products Corp., Rochambeau, Havre, 40 cs.
De Manduit Paper Corp., Sacarappa, St. Nazaire, 498 cs.
American Tobacco Co., Sacarappa, Bordeaux, 500 cs.

WALL PAPER

F. A. Binder, Berlin, Bremen, 7 bls.
F. J. Emmerich, Hamburg, Hamburg, 145 bls.
American Express Co., Hamburg, Hamburg, 3 cs.
J. E. Bernard & Co., Hamburg, Hamburg, 6 bls.
D. C. Andrews & Co., Hamburg, Hamburg, 3 cs.
Globe Shipping Co., Hmburg, Hamburg, 22 bls.
A. C. Dodman, Jr., Inc., Olympic, Southampton, 7 bls., 3 cs.
W. H. S. Lloyd & Co., American Shipper, London, 3 bls.
R. F. Downing & Co., Huronian, London, 12 bls., 2 cs.

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Journal of Commerce, Argosy, Kotka, 65 rolls.
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Perkins, Goodwin & Co., Hamburg, Hamburg, 258 bls.
Oxford University Press, Lancastria, Liverpool, 16 cs.

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P. H. Petry & Co., Berlin, Bremen, 5 cs.
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S. Gilbert, Berlin, Bremen, 23 cs.

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Standard Products Corp., Berlin, Bremen, 6 cs.

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Arlac Dry Stencil Co., Hamburg, Hamburg, 88 cs.

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Keuffel & Esser Co., Ryndam, Rotterdam, 9 cs.
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Crepe Kraft Co., Argosy, Gothenburg, 77 rolls.
Manhattan Paper Co., Argosy, Gothenburg, 21 rolls.
Arkell Safety Bag Co., Argosy, Gothenburg, 132 rolls.
Blauvelt Wiley Paper Manfg. Co., Argosy, Gothenburg, 288 rolls.
Gallagher & Ascher, Hamburg, Hamburg, 7 cs.
C. K. MacAlpine & Co., Drottningholm, Gothenburg, 101 bls.
E. H. Sergent & Co., Drottningholm, Gothenburg, 2 cs
Standard Products Corp., Rochambeau, Havre, 69 cs.
Canson & Montgolfier, Rochambeau, Havre, 24 cs.
Keller Dorian Paper Co., Rochambeau, Havre, 32 cs.

RAGS, BAGGINGS, ETC.

L. Leibowitz, Kerhonkson, Manchester, 38 bls. rags.
E. Mayer, Kerhonkson, Manchester, 37 bls. new cuttings.
Leigh Textile Co., Kerhonkson, Manchester, 304 bls. cotton waste.
E. J. Keller Co., Inc., Ryndam, ——, 187 bls. rags.
International Corp., Kerhonkson, Manchester, 30 bls. cotton waste.
G. W. Sheldon & Co., Ryndam, Rotterdam, 84 bls. waste paper.
Overton & Co., Ryndam, Rotterdam, 7 bls. rags.
Overton & Co., Ryndam, Rotterdam, 51 bls. bagging.
Castle & Overton, Inc., Ryndam, Rotterdam, 3 bls. rags.
E. J. Keller Co., Inc., London Mariner, ——, 72 bls. rags.
International Purchasing Co., Welshman, Manchester, 102 bls. bagging.
A. W. Fenton, Inc., Bristol City, Bristol, 155 bls. rags.
International Purchasing Co., Coahoma County, Antwerp, 45 bls. bagging.
C. R. Spence, Eastside, Dublin, 187 bls. rags.
Bankers Trust Co., Republic, Bremen, 16 bls. rags.
A. W. Fenton, Inc., Republic, Bremen, 87 bls. rags.
Van Oppen & Co., Republic, Bremen, 17 bls. rags.
E. J. Keller Co., Inc., Exminster, ——, 83 bls. rags.
Fidelity Trust Co., Cabo Santa Maria, Bilbao, 169 bls. rags.
National City Bank, Hamburg, Hamburg, 12 bls. rags.
Bankers Trust Co., Hamburg, Hamburg, 8 bls. rags.
Manufacturers Trust Co., Hamburg, Hamburg, 3 bls. rags.
E. J. Keller Co., Inc., Saccarappa, ——, 41 bls. rags.
Brown Bros. & Co., American Shipper, London, 36 bls. rags.
Brown Bros. & Co., Huronian, London, 36 bls. rags.
Whaling Waste Products Corp., Excellency, Genoa, 63 bls. cotton waste.
Castle & Overton, Inc., Lancastria, Liverpool, 36 bls. flax waste.
Castle & Overton, Inc., West Arrow, Belgium, 54 bls. rags.
Castle & Overton, Inc., D. Luckenbach, Japan, 36 bls. rags.
E. J. Keller Co., Inc., Kepwick Hall, ——, 310 bls. rags.
E. J. Keller Co., Inc., Hagen, ——, 59 bls. rags.
E. J. Keller Co., Inc., Hagen, ——, 19 bls. flax waste.

OLD ROPE

Furness Withy & Co., London Mariner, London, 149 coils.
Brown Bros. & Co., Bristol City, Bristol, 91 coils.
R. Canovai figli, Anna C., Trieste, 136 rolls.
Brown Bros. & Co., Exminster, Algiers, 53 coils.
Brown Bros. & Co., Hamburg, Hamburg, 37 coils.
Brown Bros. & Co., Liberty, Havre, 192 rolls.
Brown Bros. & Co., Liberty, Dunkirk, 104 coils.
Brown Bros. & Co., Huronian, London, 62 coils.
Brown Bros. & Co., Excellency, Marseilles, 88 bls.

CASEIN

American Exchange Irving Trust Co., Rochambeau, Havre, 250 bags.
A. Hurst & Co., Rochambeau, Havre, 400 bags.

WOOD PULP

Pagel, Horton & Co., Inc., Argosy, Stockholm, 1,250 bls. sulphite, 254 tons.
Atterbury Bros., Inc., Argosy, Gothenburg, 200 bls. wood pulp, 25 tons.
Bulkley, Dunton & Co., Drottningholm, ——, 1,430 bls. wood pulp.
International Accep. Bank, Drottningholm, Gothenburg, 125 bls. sulphite.
E. M. Sergeant & Co., Drottningholm, Gothenburg, 175 bls. wood pulp.
Price & Pierce, Ltd., Drottningholm, Gothenburg, 1,250 bls. wood pulp.
Bulkley, Dunton & Co., Monark, ——, 3,600 bls. wood pulp.

WOOD PULP BOARDS

Hensel, Bruckman & Lorbacher, Republic, Bremen, 50 bls.

WOOD FLOUR

State Chemical Co., Ryndam, Rotterdam, 420 bags.

PHILADELPHIA IMPORTS

WEEK ENDING FEBRUARY 23, 1929

Bank of The Manhattan Co., Bristol City, Bristol, 112 bls. rags.
Pagel, Horton & Co., Inc., Argosy, Stockholm, 1,125 bls. sulphate, 228 tons.
J. Andersen & Co., Argosy, Gothenburg, 500 bls. sulphite, 101 tons.
Paper Manufacturers Co., Argosy, Gothenburg, 5 bls., 60 rolls paper.
Chase National Bank, Exminster, Algiers, 147 bls. rags.
Bank of New York, Cabo Santa Maria, Pasages, 65 bls. rags.
Fidelity Trust Co., Cabo Santa Maria, Pasages, 101 bls. rags.
Katzenstein & Keene, Inc., Saccarappa, St. Nazaire, 392 bls. rags.
D. I. Murphy, Saccarappa, St. Nazaire, 417 bls. rags.
Salomon Bros. & Co., Saccarappa, St. Nazaire, 214 bls. rags.
V. Galaup, Saccarappa, St. Nazaire, 117 bls. rags.
A. Hurst & Co., Saccarappa, St. Nazaire, 71 bls. rags.

(Continued on page 58)

CARPENTER WOOD PRODUCTS CORP. BELLOWS FALLS, VT.
END OF GRAIN
"WEARS LONGER"
REG. U.S. PAT. OFF.

End-of-Grain Suction Box Covers

A TRIAL INSTALLATION WILL DEMONSTRATE OPERATIVE ECONOMY AND BETTER PRODUCT

They are made from Sections of Green Vermont Maple, with the grain UPRIGHT. The Wooden Sections are Diagonally Inserted between Acid Resisting Metal Rails Which are Permanently Screwed to Top Flange of the Suction Box.

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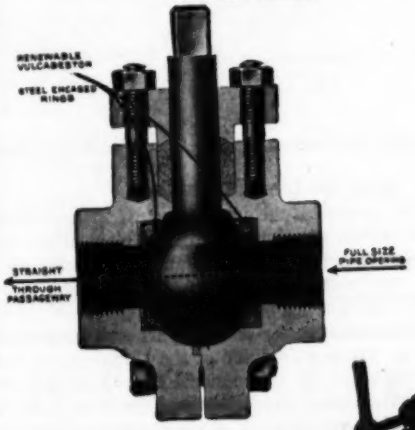

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TAYLOR, STILES & COMPANY TRADE MARK GIANT REGISTERED RIEGELSVILLE, N.J. U.S.A.

This is the GIANT 2A CUTTER WITH A CAPACITY OF 3000 lbs. PER HOUR GIANT RAG CUTTERS HAVE CAPACITIES OF FROM 1 to 5 tons per hour.

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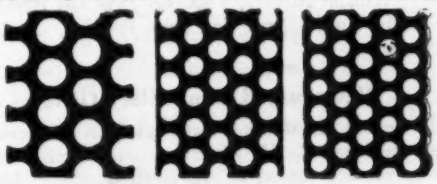

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NEW YORK OFFICE: 114 Liberty St.

Imports of Paper and Paper Stock

(*Continued from page 56*)

Castle & Overton, Inc., Saccarappa, St. Nazaire, 30 bls. rags.
Castle & Overton, Inc., Saccarappa, Bordeaux, 33 bls. rags.
D. I. Murphy, Saccarappa, Bordeaux, 80 bls. rags.
E. J. Keller Co., Inc., Saccarappa, ——, 362 bls. rags.
E. J. Keller Co., Inc., Burgerdyk, ——, 128 bls. rags.
E. J. Keller Co., Inc., Hagen, ——, 57 bls. rags.
F. Weber & Co., Excellency, Genoa, 8 cs. paper.
Castle & Overton, Inc., Excellency, Marseilles, 185 bls. rags.
Castle & Overton, Inc., Burgerdyk, Holland, 281 bls. rags.
Castle & Overton, Inc., Coahoma, Antwerp, 1,196 bls. rags.
Castle & Overton, Inc., Exbrook, Spain, 197 bls. rags.
Castle & Overton, Inc., Anaconda, Holland, 158 bls. rags.
Castle & Overton, Inc., California, France, 188 bls. rags.
Castle & Overton, Inc., Lehigh, England, 61 bls. rags.

NEWPORT NEWS IMPORTS

WEEK ENDING FEBRUARY 23, 1929

Castle & Overton, Inc., Burgerdyk, Germany, 2,040 bls. wood pulp.

CHARLESTON IMPORTS

WEEK ENDING FEBRUARY 23, 1929

Castle & Overton, Inc., Tulsa, England, 120 bls. cotton waste.

NEW ORLEANS IMPORTS

WEEK ENDING FEBRUARY 23, 1929

Castle & Overton, Inc., Gand, France, 40 bls. rags.

NORFOLK IMPORTS

WEEK ENDING FEBRUARY 23, 1929

Castle & Overton, Inc., Liguria, Germany, 600 bls. wood pulp.
M. Gottesman & Co., Inc., Argosy, Gothenburg, 5,000 bls. wood pulp, 896 tons.

BALTIMORE IMPORTS

WEEK ENDING FEBRUARY 23, 1929

S. Shapira & Co., Liberty, Dunkirk, 84 bls. rags.
Congoleum Nairn Co., Saccarappa, St. Nazaire, 134 bls. rags.
Bulkley, Dunton & Co., Etna, ——, 2,700 bls. wood pulp.
E. J. Keller Co., Inc., Ala, ——, 573 bls. wood pulp.
Castle & Overton, Inc., Liguria, Germany, 4,742 bls. wood pulp.
Castle & Overton, Inc., Carlsholm, Germany, 2,856 bls. wood pulp.
Castle & Overton, Inc., Burgerdyk, Germany, 872 bls. wood pulp.
Castle & Overton, Inc., California, France, 25 bls. rags.

BOSTON IMPORTS

WEEK ENDING FEBRUARY 23, 1929

Brown Bros. & Co., Argosy, Stockholm, 2,300 bls. sulphate, 508 tons.
The Borregaard Co., Inc., Argosy, Gothenburg, 875 bls. wood pulp, 177 tons.
J. Andersen & Co., Argosy, Gothenburg, 2,250 bls. sulphite, 457 tons.
Pagel, Horton & Co., Inc., Argosy, Gothenburg, 711 bls. sulphite, 120 tons.
Perkins, Goodwin & Co., Argosy, Gothenburg, 254 bls. sulphite, 50 tons.
J. E. Bernard & Co., Lancastria, Liverpool, 4 cs. tissue paper.
Castle & Overton, Inc., Anaconda, Rotterdam, 93 bls. rags.
Castle & Overton, Inc., Bordeaux Maru, Japan, 200 bls. rags.

Menasha Plant Expansion

Another proposed expansion in Wisconsin has been announced by George S. Gaylord, vice president of the Menasha Products Company, of Menasha, Wis., formerly the Menasha Printing and Carton Company. He declares that the growing business of his company has necessitated the erection of a large building to house its carton department. All details are not as yet ready for announcement. The plans have been drawn and permission has been obtained from the war department to proceed. This permission was necessary because the building is to protrude over the bank of the Fox River. There is a total payroll of 525 persons now.

Mr. Gaylord intimated in a newspaper interview, however, that the location of this new unit in Menasha is uncertain because of the situation with regard to motorbus transportation for the employees who live in the neighboring cities, Neenah and Appleton. The Wisconsin-Michigan Power Company, owner of local and interurban buses, has refused to accede to an increase in license fees from $100 to $300 per vehicle ordered by the city of Menasha. Official notice has been served that the bus service will be discontinued entirely March 15, and with interurban electric lines discontinued some time ago this presents a problem to all paper mills of the central Fox River Valley.

Other paper mills are also taking a hand in the bus fight in order to retain the lines on an equitable basis. Members of a committee which will take part in the hearings are: F. E. Sensenbrenner, Kimberly-Clark Corporation; John McAndrews, Menasha Wooden Ware Corporation; John Stevens, Jr., Fox River Paper Company; William Falatick, Thilmany Pulp and Paper Company; R. H. Purdy, Tuttle Press Co.; John F. Kink, Combined Locks Paper Company.

Waterbury & Sons Elect Officers

At the annual organization meeting of H. Waterbury & Sons Company held here C. H. Waterbury was elected vice president to fill the vacancy caused by the recent death of Mrs. Hannah Waterbury. The company is one of the largest manufacturers of papermakers' felts in Northern New York. J. E. Waterbury was elected president and M. H. Waterbury secretary and treasurer for the ensuing year. The stockholders elected as directors A. W. Safford, R. W. Walbran, Mrs. C. R. Waterbury, M. H. Waterbury and J. E. Waterbury.

Goes To Livermore Falls

Announcement is made of the appointment of Thomas Mangin to the position as general superintendent of the plant of the International Paper Company at Livermore Falls, Me., to fill the vacancy caused by the death of William A. Murray, who died on December 27. Mr. Mangin has been resident engineer of the Fort Edward plant of the company for several years and the promotion is a deserving one. He is a graduate of the University of Maine and entered the employ of the International Paper Company about fifteen years ago. He was assigned to duty at the Watertown plant of the company and at the outbreak of the recent war he enlisted in an engineer regiment and was commissioned as first lieutenant. He served throughout the entire struggle and was assigned to the Fort Edward mill upon his return to civilian life.

After about seven years of service in the Fort Edward mill he was transferred to the company's plant at Wilder, Vt., and later to the Ticonderoga mill. He was appointed general superintendent of the Berlin, N. H., mills about three years ago and has since been in charge of the plant there. The mills at Livermore are rated among the largest in the United States. Three mills will be Livermore Falls, North Livermore and another in the vicinity.

Postpone Wage Increase Request

Eagle Lodge Papermakers, Holyoke, Mass., which at its last meeting was about ready to announce a request for an advance in wages, today decided at their regular meeting after hearing the report of the special committee who drew up the proposed new scale of wages, to withhold action until after the annual convention to be held at Montreal March 5.

The action was doubtless taken so as to secure the backing of the convention before the demands were made. The lodge officers failed to disclose the new wage schedule that the special committee recommended. The matter of a five day week was also discussed; but it is apparent that this will have hard sledding among the manufacturers. It was proposed, however, to ask that the last tour of the week from 11 P. M. Saturday nights to 7 A. M. Sunday morning be abolished.

John W. Bailey, president of Eagle Lodge, is to go as a delegate to the Montreal convention and it may be that the proposed Holyoke scale will be submitted either formally or informally to the convention for its approval.

West Virginia Pulp and Paper Company

Manufacturers of

SUPERCALENDERED and MACHINE FINISHED BOOK and LITHOGRAPHIC PAPERS

Offset, Envelope, Bond, Writing, Cover and Music Paper, High Grade Coated Book, Index Bristol, Post Card, Kraft and Label Papers.

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A SIMPLE change in the manufacturing process often results in a pronounced decrease in cost of production.

Paper Mills use Starch for sizing to produce better and stronger sheets with lower cost of manufacture.

Our SPECIAL PAPER brand for beater-sizing increases strength of sheet and gives improved finish.

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BROWN COMPANY'S ALPHA GRADES

of Purified Cellulose Fibre representing some of the valuable results of our many years of research in cellulose chemistry.

SUPER ALPHA

for strength in Tear, Fold and Mullen. Super Alpha equals the higher grades of rags in the manufacture of fine papers.

EASY-BEATING ALPHA

This is a grade developed for mills of limited beating capacity. While not giving results equal to Super Alpha, it produces wonderful paper on short beating.

REGULAR ALPHA

This is a grade midway between Super and Easy-Beating.

Use ALPHA for Quality

BROWN COMPANY FOUNDED 1852 Portland, Maine

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, February 27, 1929.

Trading in the local paper market was active during the past week, due in some measure to the opportunities to get together afforded by the convention. Practically all the various grades were in improved request and now that the spring campaign is beginning there are signs of even greater activity in the near future. Prices are fairly steady, in most instances.

Production of news print is being maintained at around 80 per cent of capacity. Consumption is well up to average for the time of year. Offerings are being freely absorbed and accumulations are not excessive. The price situation is still vague, however, and the public announcement of the contract quotations for the current year is still anxiously awaited.

The paper board situation is also rather involved. While demand for the various grades is persistent, the price situation is still obscure, especially on box and chip board. Some improvement has been noticed in the fine paper market and tissues are in excellent request. The coarse paper market is practically unchanged and wrapping paper is moving in normal volume.

Mechanical Pulp

Although there has been a slight falling off in the demand for ground wood pulp, the local market is in a sound position. Production is somewhat restricted but accumulations are apparently large enough to take care of current requirements. Prices of both imported and domestic mechanical pulp are generally holding to previously quoted levels without difficulty.

Chemical Pulp

The chemical pulp market is exhibiting a strong undertone at present. Some paper manufacturers took advantage of their visit to New York to attend the convention, to secure their requirements of raw materials for some time ahead. Prices rule steady to firm and there is not much talk of concessions around. In most quarters, the outlook for the future is considered promising.

Old Rope and Bagging

Paper mill interest in old rope is improving. Offerings of both domestic and foreign varieties are being readily absorbed. Prices are somewhat firmer. Imported manila rope has advanced to from $3.50 to $3.75. Mixed strings are also in steady request. The bagging market continues quiet although new burlap cuttings and bleachery burlap are moderately active.

Rags

Steadiness prevails in the domestic rag market. Cotton cuttings are in satisfactory request at steady prices. Roofing rags continue to move in fair volume. Other grades are practically unchanged. The foreign rag market is still rather quiet, due mostly to conditions abroad, but quotations are generally unaltered.

Waste Paper

Collections of paper stock have been retarded by the heavy snow storm which was apparently general throughout the eastern states. News and book stock have been particularly scarce and offerings have been quickly snapped up. Prices are somewhat firmer. Strictly folded news is now quoted at from .70 to .80 and No. 1 mixed paper at from .50 to .55. Container manilas are selling at from .60 to .70.

Twine

Demand for the various grades of twine is showing signs of improvement, influenced by the expanding request for wrapping paper for spring and Easter requirements. Quotations are holding up to previously quoted levels in a satisfactory manner. Improved conditions are anticipated during the next few weeks, at least.

Winfred F. Robertson Dead

KEENE, N. H., February 25, 1929.—Word has been received here of the death at Los Angeles, Monday, February 18, of Winfred F. Robertson, 48, a business man and paper manufacturer of Hinsdale. Mr. and Mrs. Robertson were on a tour to Hawaii and Mr. Robertson died on board the steamer *President Johnson*, which was docked at Los Angeles. Two children, Edwin W. and Irene S. Robertson are living.

Mr. Robertson was born in Holyoke, Mass., July 25, 1880. He was graduated from Keene High School and Massachusetts Institute of Technology, class of '03. He returned to Hinsdale and became engaged in the paper manufacturing business. The several plants which he erected and organized have been merged since under the name of the Robertson Company.

H was a director of the Peoples National Bank of Brattleboro, Vt., and of the New Hampshire Manufacturers Association. Mr. Robertson was a member of many Masonic orders and clubs, including the Engineers Clubs of Boston and New York, West End Club of New York, Brattleboro, Vt., Country Club, Whitney Cove Club of Woodlands, Me., and the Wantasiquet Trout Club.

Mr. Robertson was also a charter member of the Technical Association of the Pulp and Paper Industry.

Package Merchandising Grows

In a recent discussion of package merchandising, O. F. Benz, director of sales of the Du Pont Cellophane Company, stated that in his opinion 1929 would be a greater year than ever for package merchandising.

"With this fact in mind," Mr. Benz continued, "the Cellophane Company has made decided additions and improvements to the Package Development Service. This department is being featured in all our advertising now, and we invite samples of manufacturers' products for packaging and merchandising suggestions. The men in charge have had real experience with manufacturers' package problems and are well equipped to give advice, design packages and make merchandising suggestions.

"This package development department has been created solely for specialized work, and we hope this additional service will be as productive and helpful as possible in cooperating with the manufacturers in all lines."

Cornell Wood Products Changes

A part of the office force of the Cornell Wood Products Company is being moved from Chicago to Cornell, Wis., where the wall board and other plants of the concern are located. A number of employees will be transferred each month until May so that the change will be gradual. This was done also in order to give the company time to arrange additional living quarters at Cornell.

83 YEARS EXPERIENCE

In Making

Felts for Paper Manufacturers certainly recommends our ability to satisfactorily serve your requirements

OUR TRIUNE AND MULTIPLE PLY DRYER FELTS

English Weave—Fine Face Felt in Three, Four, Five and Six Ply—60" to 214" in width—insure large production. Absolutely no felt marks in paper.

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Fourdrinier Wires, all widths up to 300 inches

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, February 27, 1929.

BLANC FIXE.—Most of the business transacted in the blanc fixe market during the past week was along routine lines. Prices remain unaltered. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is still selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Some improvement was noticed in the bleaching powder market. Contract shipments are moving in a satisfactory manner. Prices are generally holding to former levels, and shading is infrequent. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—The casein market is exhibiting a strong undertone. Prices are unaltered. Domestic casein is quoted at from 16½ cents to 17 cents per pound, while standard ground imported is selling at 16½ cents per pound and finely ground at 17 cents per pound, all in bags, **car lot quantities.**

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. The contract movement is well up to average and prices are holding to schedule. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Despite the holidays, trading in the china clay market was fairly active. Shipments against contract were normal. Prices ruled steady. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is still selling at from $8 to $13 per ton, at mine.

CHLORINE.—Supplies of chlorine are moving into consumption in heavy volume. Demand for this product is satisfactory. Prices remain unchanged. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on standard contracts. The spot quotation ranges from 3¼ to 3½ cents per pound.

ROSIN.—The rosin market continues to fluctuate. At the naval stores the grades of gum rosin used in the paper mills are now quoted at from $8.75 to $9.30 per 280 pounds, ex dock, in barrels. Wood rosin is still selling at from $7.20 to $8.00 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Demand for salt cake is persistent and the market is in a sound position. Shipments against contract are going forward in good volume. Prices are steady. Salt cake is still quoted at from $16 to $18 per ton, while chrome salt cake is selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—The soda ash market is buoyant. Production is being made in sufficient volume to take care of current requirements. Prices are holding to schedule without difficulty. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—While the starch market was only moderately active during the past week, quotations rule steady to firm. Withdrawals against contract have been normal for the season. Special paper making starch is still quoted at $3.82 per 100 pounds, in bags, and at $3.99 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—The sulphate of alumina market is displaying an improved trend. Shipments against contract are well up to average. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55, and iron free at from $1.95 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Mill demand for sulphur is fairly persistent. Prices are holding to schedule without difficulty. Sulphur is quoted at $18 per ton, in lots of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and nearby car loads, the quotation is $21 per ton.

TALC.—Conditions in the talc market are practically unchanged. Supplies are moving into consumption in normal volume. Prices are holding to former levels. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines, while imported talc is selling at from $18 to $20 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
News—		
Rolls, contract	Nominal	
Rolls, transient	Nominal	
Sheets	Nominal	
Side Runs	Nominal	
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.00	@ 4.25
Southern	3.75	@ 4.00
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00
(Delivered New York)		
Boards—per ton—		
News	32.50	@40.00
Straw	52.50	@55.00
Chip	30.00	@37.50
Binders' Boards	65.00	@67.50
Sgl. Mla. Ll. Chip	47.50	@52.50
Wood Pulp	80.00	@85.00
Container	52.50	@55.00
85 Test Jute Liner	52.50	@55.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@31.25
Dry	32.00	@34.00
(F. o. b. Mill)		
No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.65	@ 4.40
Easy Bleaching	2.75	@ 2.90
No. 1 strong unbleached	2.50	@ 2.80
Mitscherlich unbleached	2.55	@ 3.25
No. 2 strong unbleached	2.40	@ 2.50
No. 1 Kraft	2.50	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.75	@ 3.85
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.50
Mitscherlich	3.00	@ 3.25
Kraft (Domestic)	2.50	@ 3.30
Soda Bleached	3.15	@ 3.30
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.50	@ 1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.00	@11.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	11.00	@11.50
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Rags

New White Cuttings	10.50	@11.50
Unbleached Cuttings	10.00	@11.00
Light Flannelettes	7.50	@ 8.00
New Light Silesias	7.00	@ 7.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
New Mixed Cuttings	2.75	@ 3.25
New Dark Cuttings	2.50	@ 3.00

Old Rags

No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
No. 1 White Cotton	5.50	@ 6.50
No. 2 White Cotton	4.50	@ 5.50
No. 3 White Cotton	3.00	@ 4.00
No. 4 White Cotton	1.90	@ 2.15
Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.15	@ 2.30
French Blue Linens	2.65	@ 2.75
French Blue Cottons	2.10	@ 2.25
German Blue Linens	2.35	@ 2.55
German Blue Cottons	2.10	@ 2.20
Checks and Blues	1.80	@ 1.90
Lindsay Garments	1.80	@ 1.85
Dark Cottons	1.60	@ 1.65
Old Shopperies	1.50	@ 1.55
New Shopperies	1.50	@ 1.60

Old Rope and Bagging

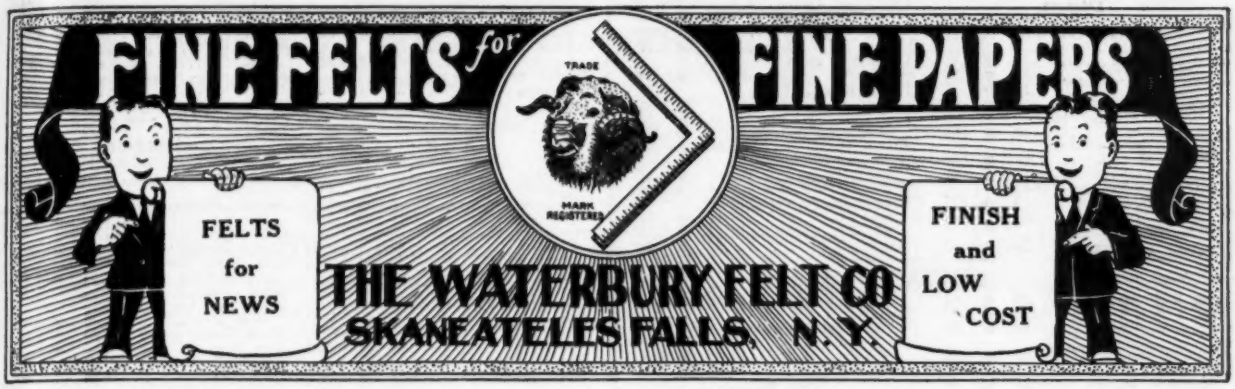
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.70
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.50	@ 3.75
Domestic	3.25	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.50	@ 2.60
White envelope cuttings	3.25	@ 3.50
Flat Stock—		
Stitchless	1.70	@ 1.80
Overissue Mag.	1.70	@ 1.80
Solid Flat Book	1.65	@ 1.75
Crumpled No. 1	1.15	@ 1.25
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.70	@ 1.80
New B. B. Chips	.65	@ .75
New Env. Cut	2.40	@ 2.60
Manilas—		
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.75	@ .80
Container	.60	@ .70
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.75	@ 1.85
News—		
No. 1 White News	1.70	@ 1.75
Strictly Overissue	.85	@ .95
Strictly Folded	.70	@ .80
No. 1 Mixed Paper	.50	@ .55
Common Paper	.30	@ .35



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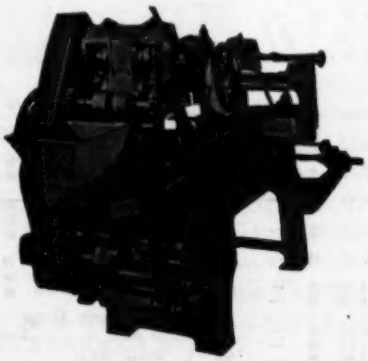

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Twines

(F. o. b. Mill)

Cotton—
- No. 1 ..... .39 @ .40
- No. 2 ..... .37 @ .38
- No. 3 ..... .36 @ .37
- B, C, 18 basis ... .38 @ .40
- A. B. Italian, 18 basis ..... .48 @ .53

Finished Jute—
- Dark 18 basis .... .24 @ .25
- Light 18 basis .... .27 @ .28

Jute Wrapping, 3-6 Ply—
- No. 1 ..... .19 @ .21
- No. 2 ..... .18 @ .20

Tube Rope—
- 4-ply and larger .. .16 @ .17

Fine Tube Yarn—
- 5-ply and larger .. .21 @ .23
- 4-ply ..... .25 @ .29
- 3-ply ..... .28 @ .32

Unfinished India—
- Basis ..... .13 @ .14

Paper Makers Twine Balls ..... .11 @ .12

Box Twine, 2-3 ply.. .15 @ .17
- Jute Rope ..... .17 @ .19

Ameri. Hemp, 6..... .29 @ .31

Sisal Hay Rope—
- No. 1 Basis ..... .16 @ .18
- No. 2 Basis ..... .14 @ .16

Sisal Lath Yarn—
- No. 1 ..... .14 @ .16
- No. 2 ..... .12 @ .14

Manila Rope ..... .32 @ .24

CHICAGO

All Rag Bond ..... .35 @ .41
No. 1 Rag Bond .... .25 @ .35
No. 2 Rag Bond .... .14 @ .25
Water Marked Sulphite Bond ..... .09 @ .12
Sulphite Bond ..... .06¼ @ .11
Superfine writing.... .18 @ .24
No. 1 fine writing... .14 @ .18
No. 2 fine writing... .12 @ .14
No. 3 fine writing... .08½ @ .12
No. 1 M. F. Book.. .06½ @ .07¼
No. 2 M. F. Book.. .05¼ @ .06¼
No. 1 S.&S.C. Book .06¼ @ .07¼
No. 2 S.&S.C. Book .05¼ @ .06½
Coated Book .. .... .07½ @ .12
Coated Label ..... .07½ @ .10
News—Roll, mill ... .03½ @ .04¼
News—Sheets, mill.. .03¼ @ .04¼
No. 1 Manila ..... .04¼ @ .05¼
No. 1 Vibre ..... .04¼ @ .05¼
No. 2 Manila ..... .04¼ @ .04¼
Butcher's Manila ... .04 @ .04½
No. 1 Kraft ..... .06¼ @ .06½
Southern Kraft ..... .03¼ @ .04
No. 2 Kraft ..... .04 @ .04¼
Wood Tag Boards .. .04¼ @ .06¼
Sulphite Screenings.. .03 @ .03¼
Manila Tissue—
- 24x36 Sheet ..... .07 @ .07¼

White Tissue—
- 20x30 Sheet ..... .07¼ @ .47½

Boards, per ton—
(Delivered Central Territory)
- Plain Chip .....37.50 @41.00
- Solid News .....47.50 @ —
- Manila Lined Chip.55.00 @ —

Container Lined—
(Delivered Central Territory)
- 85 Test .....65.00 @70.00
- 100 Test .....70.00 @ —

Old Papers

(F. o. b. Chicago)

Shavings—
- No. 1 Hard White. 2.35 @ 2.45
- White Env. Cuttings ..... 2.50 @ 2.55

No. 1 Soft Shavings. 2.10 @ 2.15
No. 1 Mixed ..... 1.00 @ 1.05
No. 2 Mixed ..... .80 @ .85
Ledger & Writings.. 1.55 @ 1.65
Solid Books ..... 1.40 @ 1.50
Blanks ..... 1.50 @ 1.65
Krafts ..... 1.70 @ 2.00
New Kraft Cuts.... 2.30 @ 2.35
Manila Envelope Cuttings ..... 1.75 @ 1.90
Ex. No. 1 Manila... 1.40 @ 1.50
Print Manila ..... .85 @ .90
Folded News (overissue) ..... .70 @ .80

Old Newspapers—
- No. 1 ..... .75 @ .80
- No. 2 ..... .65 @ .70

Mixed Papers—
- No. 1 ..... .65 @ .70

Roofing Stocks—
(F. o. b. Chicago, net cash)
- No. 1 .....30.00 @ —
- No. 2 .....28.00 @ —

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds ..... .06 @ .40
Ledgers ..... .10 @ .40

Writings—
- Superfine ..... .13 @ .18
- Extra fine ..... .20 @ .22
- Fine ..... .18 @ .26½
- Fine, No. 2..... .15 @ .25
- Fine, No. 3..... .10 @ .20

Book, M. F. ..... .06 @ .07
Book, S. S. & C..... .06 @ .07½
Book, Coated ..... .10 @ .16
Coated Lithograph... .07 @ .11
Label ..... .07 @ .11
News ..... .03½ @ .04
No. 1 Jute Manila.. .08½ @ .09
Manila Sul., No. 1... .04½ @ .05½
Manila No. 2 ..... .03¾ @ .04
No. 2 Kraft ..... .06 @ .06½
No. 1 Kraft ..... .06½ @ .07
Common Bogus ..... .03 @ .03½
Straw Board .....52.50 @75.00
News Board .....35.00 @38.00
Chip Board .....30.00 @38.00
Wood Pulp Board...85.00 @95.00
(Carload Lots)

Binder Boards—
- No. 1, per ton....75.00
- No. 2, per ton....70.00
- Carload lots .....68.00 @70.00

Tarred Felts—
- Regular .....53.00 @55.00
- Slaters (per roll) .84 @ .94

Best Tarred, 1-ply (per roll) ..... 1.85 @ 1.95
Best Tarred, 2-ply (per roll) ..... 1.44 @ 1.54
Best Tarred, 3-ply ... 1.93 @ 2.08

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—
- New White, No. 1 .10½ @ 11
- New White, No. 2 .07 @ .07½
- Light Silesias .... .07 @ .07½
- Silesias, No. 1 ... .08½ @ .09
- Black Silesia, soft. .05 @ .05½
- New Unbleached .. .10½ @ .11
- Washable, No. 1.. .04½ @ .05
- Blue Overall ..... .07½ @ .08
- Fancy .....

Cottons—According to grades—
- Washable, No. 2.. .03 @ —
- New Blue ..... .03 @ .03½
- New Black Soft .. .05 @ .05¾
- New Light Seconds .02½ @ .03
- New Dark Seconds 1.85 @ 2.00

Khaki Cuttings—
- No. 1 O. D.... .05½ @ .05¾
- No. 2 Mixed... .04½ @ .04¾

Corduroy ..... .03 @ .03½
- New Canvas ..... .08½ @ .09
- New Black Mixed. .03¾ @ .04½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—
- Foreign ..... 1.50 @ 1.60
- Domestic ..... 1.75 @ —
- Manila Rope ..... 3.50 @ 4.00

Sisal Rope ..... 1.50 @ —
Mixed Rope ..... 1.10 @ 1.25

Scrap Burlaps—
- No. 1 ..... 1.50 @ 1.60
- No. 2 ..... 1.10 @ 1.20

Wool Tares, heavy.. 3.00 @ —
- Mixed Strings .... 1.15 @ 1.25

No. 1, New Light Burlap ..... 2.50 @ 2.75
New Burlap Cuttings 2.00 @ 2.25

Old Papers

(F. o. b. Phila.)

Shavings—
- No. 1 Hard White 3.20 @ 3.25
- No. 2 Hard White 2.75 @ 3.00
- No. 1 Soft White.. 2.50 @ 2.60
- No. 2 Soft White.. 1.90 @ 2.00
- No. 1 Mixed ..... 1.50 @ 1.60
- No. 2 Mixed ..... .90 @ 1.00

Solid Ledger Stock.. 1.85 @ 1.90
Writing Paper ..... 1.60 @ 1.65
No. 1 Books, heavy.. 1.45 @ 1.55
No. 2 Books, light... 1.20 @ 1.25
No. 1 New Manila .. 2.40 @ 2.50
No. 1 Old Manila .. 1.50 @ 1.60
Print Manila ..... .95 @ 1.00
Container Manila .... .85 @ .90
Old Kraft ..... 2.25 @ 2.50
Common Paper ..... .55 @ .60
No. 1 Mixed Paper.. .60 @ .65
Straw Board, Chip.. .70 @ 75
Binders Board, Chip. .70 @ .75
Overissue News .... .85 @ .90
Old Newspaper ..... .60 @ —

Domestic Rags (Old)

White, No. 1—
- Repacked ..... 4.25 @ 4.50
- Miscellaneous ..... 3.50 @ 3.75

White, No. 2—
- Repacked ..... .01¼ @ .02
- No. 2 ..... 1.30 @ 1.35
- No. 3 (Roofing).. 1.15 @ 1.25
- No. 4 ..... 1.00 @ 1.15
- No. 5A..... .75 @ .85
- B..... .65 @ .75
- C..... .65 @ .75

Thirds and Blues—
- Repacked ..... 2.00 @ 2.25
- Miscellaneous ..... 1.60 @ 1.80

Black Stockings (Export) ..... 3.90 @ 4.25

Roofing Stock—
- Foreign No. 1..... 1.60 @ 1.70

BOSTON

Paper

(F. o. b. Mill)

Ledgers—
- Sulphite ..... .07½ @ .15
- Rag content ..... .15 @ .30
- All rag ..... .38 @ .52½

Bonds—
- Sulphite ..... .16½ @ .11½
- Rag content .... .15 @ .30
- All rag ..... .36½ @ .65

Writings ..... .07 @ .20
- Superfines ..... .11 @ .31

News ..... .03½ @ .04
Book, Super ..... .06 @ .09
Book, M. F. ..... .05¼ @ .08½
Book, Coated ..... .08½ @ .20
Coated Litho ..... .09 @ .12
Label ..... .09½ @ .15
Jute Manila No. 1.... .11 @ .13
Manila, Sul. No. 1.... .04¼ @ .06½
Manila, Sul. No. 2.... .03¼ @ .04½
No. 1 Kraft ..... .05½ @ .06½
No. 2 Kraft..... .03¼ @ .04½
Common Bogus .... .02 @ .02¾
- Delivered New England points

Straw Boards, rolls .009 52.50
Straw Board in Sheets, basis 35s to 70s...54.50 @55.00
Filled News Board..37.50 @40.00
Chip Board ..... 35.00 @37.50
Single Manila Lined Chip .....47.50 @50.00
Single White, Patent Coated Newsboard Bender .....67.50 @80.00
Wood Pulp Board...80.00 @85.00
Binder Boards .....70.00 @75.00

(F. o. b. Mill)

Tarred Felts—
Regular, carload lots .....65.00 @ —

Old Papers

(F. o. b. Boston)

Shavings—
- No. 1 Hard White. 3.25 @ 3.75
- No. 2 Hard White. 2.60 @ 2.90
- No. 1 Soft White. 2.50 @ 2.60
- No. 1 Mixed..... 1.10 @ 1.15
- No. 2 Mixed..... .85 @ .90

Solid Ledger Stock.. 2.35 @ 2.45
No. 1 Books, Heavy. 1.50 @ 1.60
No. 1 Books, Light. — @ 1.15
Manila Env. Cuttings 2.00 @ 2.25
No. 1 Old Manila... 1.15 @ 1.20
White Blank News.. 1.60 @ 1.75
Old Kraft ..... 1.85 @ 1.90
- Print Manila ..... .80 @ .90

No. 1 Mixed Paper.. .50 @ .55
Overissue News ..... .75 @ .77½
Old Newspapers .... .65 @ .67½
Box Board, Chip.... .55 @ .60

Bagging

(F. o. b. Boston)

Foreign ..... 1.40 @ 1.45
Foreign ..... — @ 1.60
Manila Rope—
- Foreign ..... 4.00 @ 4.25
- Domestic ..... 3.90 @ 4.00

Mixed Strings ..... .90 @ 1.00
Jute Wool Strings.. — @ 1.00
Scrap Burlaps ..... 1.35 @ 1.40
Scrap Sisal ..... 1.60 @ 1.80
Scrap Sisal for anredding ..... 1.75 @ 2.00
Wool Tares, heavy.. — @ 1.50
New Burlap Cutting. 1.90 @ 2.00
Australian Wool Pouches ..... 2.75 @ 3.00

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—
- New White No. 1. .09½ @ .10
- Silesias, No. 1..... .06 @ .06¼
- New Unbleached .. .11 @ .11½
- Fancy ..... .06 @ .06½
- Washable ..... .04 @ .04½

Cottons—According to grades
- Blue Overalls .... .07¼ @ —
- New Black, soft .... .04 @ .04¼
- Khaki Cuttings ..... .04 @ .04½
- O. D. Khaki ..... .05½ @ .05¾
- Corduroy ..... .03 @ .03½
- New Canvas ..... .08 @ .08¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas ..... .04½ @ —

White No. 1—
- Repacked ..... 4.75 @ 5.25
- Miscellaneous ..... 5.00 @ —

White No. 2—
- Repacked ..... .04½ @ .05
- Miscellaneous ..... .03½ @ .04

Twos and Blues..... 2.85 @ 3.00

Thirds and Blues—
- Repacked ..... 2.75 @ 2.90
- Miscellaneous ..... 1.75 @ 1.90

Roofing Stock—
- No. 1 ..... 1.65 @ 1.75
- No. 2 ..... 1.45 @ 1.55
- No. 3 ..... 1.05 @ 1.10
- No. 4 ..... 1.10 @ 1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons ..... 1.50 @ 1.55
New No. 1 Shirt Cuttings ..... 9.00 @10.00
Dutch Blues ..... 2.00 @ 2.10½
Lace Curtains ..... 5.00 @ 5.25
New Checks & Blues 4.25 @ 4.50
Old Fustians .... 1.60 @
Old Linsey Garments 1.70 @ 1.80

TORONTO

Paper

(F. o. b. Mill)

Bond—
- No. 1 Sulphite.... .12½ @ —
- No. 2 Sulphite.... .10¼ @ —
- No. 1 Colored.... .13½ @ —
- No. 2 Colored.... .11¼ @ —

Ledgers (sulphite) .. — @ —
Ledgers, No. 1 .... .36 @ —
Ledgers, No. 2 .... .27 @ —
Writing ..... .09½ @ .10

News f. o. b. Mills—
- Rolls (carloads) .. 3.25 @ —
- Sheets (carloads).. 3.75 @ —
- Sheets (2 tons or over) ..... 4.00 @ —

Book—
- No. 1 M. F. (carloads) ..... 7.50 @ —
- No. 2 M. F. (carloads) ..... 7.25 @ —
- No. 3 M. F. (carloads) ..... 7.00 @ —
- No. 1 S. C. (carloads) ..... 8.00 @ —
- No. 2 S. C. (carloads) ..... 7.75 @ —
- No. 3 S. C. (carloads) ..... 7.50 @ —
- No. 1 Coated and Litho .....13.25 @ —
- No. 2 Coated and Litho .....12.25 @ —
- No. 3 Coated and Litho .....11.50 @ —
- Coated tinted .....14.50 @ —

Wrapping—
- Rag Brown ..... 4.95 @ —
- White Wrap ..... 5.25 @ —
- "B" Manila ..... 5.80 @ —
- No. 1 Manila .... 6.65 @ —
- Fiber ..... 6.65 @ —
- Kraft, M. F. .... 7.00 @ —
- M. G. .....7.00 @ —

Pulp

(F. o. b. Mill)

Ground Wood .....30.00 @31.00
Sulphite easy bleaching .....60.00 @ —
- Sulphite news grade.60.00 @ —
- Sulphite, bleached....77.50 @ —
- Sulphate .....65.00 @ —

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—
- White Env. Cut.. 3.00 @ —
- Soft White Book Shavings ..... 2.85 @ —
- White Blk. News.. 1.60 @ —

Book and Ledger—
- Flat Magazine and Book Stock (old) 1.40 @ —
- Light and Crumpled Book Stock. 1.25 @ —
- Ledgers and Writings ..... 1.50 @ —
- Solid Ledgers .... 1.50 @ —

Manilas—
- New Manila Cut... 1.50 @ —
- Printed Manilas .. 1.00 @ —
- Kraft ..... 2.25 @ —

News and Scrap—
- Strictly Overissue.. .90 @ —
- Strictly Folded ... .80 @ —

No. 1 Mixed Paper.. .70 @ —

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings ..... .11½ @ —
Fancy Shirt Cuttings. .05¼ @ —

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21 EAST 40TH STREET, NEW YORK
PULP AND PAPER MILL ENGINEER

B. M. BAXTER & CO.
Engineering Service for Paper Mills
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The Paper Industry is successfully using thousands of feet of this Pipe and they find it to be the best conveyance for White Water, Paper Stock, and Acids that can be obtained.
Pressure Pipe That Never Bursts. Built in sizes 1 inch to 48 inches.
A. Wyckoff & Son Company
1855 Elmira, N. Y., U. S. A. 1928

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Oiled Stencil Board
Lamp Shade Parchment
IN A VARIETY OF GRADES AND COLORS
101 BEEKMAN STREET NEW YORK

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are rapidly expanding, so we are improving our facilities, and are prepared to ship promptly in Tank Cars, Multi-Unit Tank Cars (1-ton containers), or Cylinders (150 lbs. or 100 lbs.) from either Philadelphia, Pa., Wyandotte, Mich., or Menominee, Mich., and very soon from our new plant at Tacoma, Wash.
Inquiries and general correspondence should be addressed to our Philadelphia Office.
Pennsylvania Salt Mfg. Company
Incorporated 1850.
Widener Building, Philadelphia, Pa.
Representatives:
New York Pittsburgh Chicago St. Louis
Works:
Natrona, Pa. Wyandotte, Mich.
Philadelphia, Pa. Menominee, Mich.
Tacoma, Wash. (Under construction 1928)

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171 Madison Ave. New York City

MID-WEST PAPER MILL MACHINERY
Send Us Your Inquiries
THE MID-WEST MACHINE COMPANY
DAYTON, OHIO

Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power & Paper 5s, 1943	90	91
Abitibi Power & Paper 6s, serially to 1934	100	102
American Writing Paper 6s, 1947	81	87
Bastrop Pulp & Paper 6½s, 1940	103	105½
Bedford Pulp & Paper 6½s, 1942	97	100
Belgo-Canadian Paper 6s, 1943	100	103
British-Columbia Pulp & Paper 6s, 1950	89	92
Brown Paper Mills Serial 6s, 1941	97	100
Brown Company 5½s, 1946	98	101
Bryant Paper 6s, 1942	98	101½
Canadian Paper Board 7s, 19337	97	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1929	95	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago, Debenture 6s, 1936	95	98
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	78	...
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	95	...
Champion Paper Corp. 6s, 1945	95	98
Container Corp. of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	90	99
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	101	102
Dells Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	80	...
Donnaconna Paper 5½s, 1948	93	...
Eastern Manufacturing Co. 7s, 1938	97	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Irange Paper 7s, 1942	101	...
Fort William Paper 6s, 1946	100	104
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	100	...
Hawley Pulp & Lumber 6s, 1946	96	..
Hawthorne Paper Company 6s, 1937	80	...
Hoberg Paper & Fibre 7s, 1937	94	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
Itasca Paper & Prairie River Power Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Power Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	83	90
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Paper 6s, 1941	105	108
Marathon Paper Mills Serial 5½s, 1942	99	101
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	97	101
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper Serial 6½s, 1947	102	105
Munising Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1928-42	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Orono Pulp & Paper 5s, 1941	96½	...
Oswego Falls Corp. 6s, 1941	99	102
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Paper 6s, 1938	101	103
Penobscot Chemical Fibre 6s, 1942	102	105
Port Alfred Pulp & Paper 5½s, 1947	98	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Queen City Paper 7s, 1933	98	...
River Raisin Paper 6s, 1936	98	100
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	102
St. Maurice Valley Corp. 6s, 1945	101	104
St. Maurice Valley Corp. 5½s, 1947	98½	100½
St. Regis Paper of Canada 6s, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	102
Smith (Howard) Paper Mills 7s, 1941	104	106
Spanish River Pulp & Paper 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	96
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1934	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	102	...
Waterway Paper Products 6s, 1931	100	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parson Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9¼	10¼
American Box Board, Com.	9¼	10¼
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P. Pfd	65	75
Brompton Pulp & Paper, 8% Pfd.	100	...
Champion Fibre, 7% Pfd.	108	110
Diem & Wing, 7% Pfd.	92	97
Eastern Mfg. Co. 1st Pfd.	55	...
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	100	...
Hinde & Dauch, Com.	125	None Off.
Hinde & Dauch, 6% Pfd.	102	None Off.
Holyoke Card & Paper	160	None Off.
Marathon Paper Mills, Com.	150	...
Mengel Co., Pfd.	102	104
Midwest Box Co., 8% Pfd.	98	101
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers, Com.	195	...
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.	80	...
Richardson Co., Com.	170	...
Sabin Robbins Paper Co., 8% Pfd.	105	110
St. Croix Paper	155	...
St. Regis Paper Co., 7% Cum. Pfd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None Off
West Virginia Pulp and Paper Company	55	57
West Virginia Pulp and Paper, Pfd.	100	10?
Whitaker Paper, 7% Cum. Pfd.	105	None Off.

Indianapolis Demand Spotty

While the paper demand in Indianapolis is rather spotted the jobbers seem to be optimistic concerning the probable volume for spring. The sale of fine papers to the printing trade remains good and the tendency is toward more volume.

Reports from most of the printers indicate that a good volume of work already has been contracted for and more is in the offing. Prices remain firm. Printers are buying only what they have to have and this is to be expected, according to paper jobbers. However, any increase in business done by printers will be reflected immediately in the business of the jobbers. Most of the work being done now is of a high quality and much color printing is noticed.

Cover pages are much in demand for catalog work and pamphlets and like jobs. Demand for high grade stationery lines is only fair, but some increase has been noticed during the last two weeks. With the coming of spring and the direct by mail advertising campaigns of business houses launched for spring merchandise, the situation is expected to improve.

Building papers are beginning to move more actively, though the demand is not to be compared with what it will be in a month from now. Severe temperatures during the last month have kept interest in these papers down. Demand for box paper is improving somewhat, particularly for heavy box stock. This is attributable to the general quickening of industrials in this section. Little demand has been seen for bags during recent weeks and there have been some rather wild price concessions both by mills and jobbers. Even concessions have failed to stimulate business.

Paper stock business is spotted. Mills are buying in reduced amounts and the general situation is unfavorable.

Safepack-Ruberoid Merger

The Board of Directors of the Safepack Mills have finally approved of the plan involving the merging of the company's assets with those of the Ruberoid Company. The proposed plan of operation will parallel the particular method which has previously functioned successfully, whereby each division will continue to maintain its own identity and operate independently of the other division.

The same personnel will continue as heretofore, with the same management, the same sales representatives, the same offices and manufacturing staffs. The same line of products will be manufactured and will be marketed under the same established brands as in the past.

The merging with Ruberoid will ensure a number of outstanding advantages, among which are the following: Safepack line of products will, as soon as possible, be rounded out by adding lines not previously offered. Customers will share in the economies that will result through the combined purchasing of raw materials, the centralization of research, engineering and manufacturing problems.

The Safepack Mills will be associated with the oldest manufacturer of prepared roofings in the United States, and one of the outstanding leaders in the industry.

Badger Paper Mills Chartered

Articles of incorporation have been filed with the Secretary of State at Madison, Wis., for the Badger Paper Mills, Inc. They provide for 20,000 shares of preferred stock and 65,000 shares of common stock. This is the new company which purchased the Peshtigo Paper Company mills at Peshtigo, Wis., recently. The corporate organization is to be completed at once.